5-2330-305-14

TECHNICAL MANUAL

OPERATOR'S, ORGANIZATIONAL, DIRECT SUPPORT AND GENERAL SUPPORT MAINTENANCE MANUAL

TOPOGRAPHIC SUPPORT SYSTEM CHASSIS, SEMI-TRAILER

NSN: 2330-01-076-4797

This manual supersedes TM 5-2330-305-14, 6 June 1983, including all changes.

HEADQUARTERS, DEPARTMENT OF THE ARMY
20 FEBRUARY 1987

D 101.11:

READEX FICHE best copy available

WARNING

DEATH or severe injury to personnel and/or damage to property may result if personnel fail to observe safety precautions.

If spring brakes are caged, deactivated or removed, the trailer will have no emergency or parking brakes and must not be driven in traffic or parked without blocking wheels.

Be sure that ISO container is locked to trailer before attempting to move trailer.

Use lifting and moving equipment in good repair to prevent personnel injuries.

Do not remove or disassemble brake chamber or clevis without caging brakes.

Cleaning solvent is potentially dangerous. Avoid repeated and prolonged skin contact and breathing of vapors. Use in well ventilated area. Cleaning solvent is toxic, volatile and combustible.

Do not work on pneumatic components without depressurizing air system.

For first aid procedures, refer to FM 21-11.

TECHNICAL MANUAL

NO. 5-2330-305-14

HEADQUARTERS
DEPARTMENT OF THE ARMY
WASHINGTON, D.C., 20 FEBRUARY 1987

Operator's, Organizational, Direct Support and General Support Maintenance Manual

TOPOGRAPHIC SUPPORT SYSTEM
CHASSIS, SEMI-TRAILER
NSN: 2330-01-076-4797

REPORTING ERRORS AND RECOMMENDING IMPROVEMENTS.

You can help improve this manual. If you find any mistakes or if you know of a way to improve the procedures, please let us know. Mail your letter, DA Form 2028 (Recommended Changes to Publications and Blank Forms),or DA Form 2028-2 located in back of this manual direct to: Commander, U.S. Army Troop Support Command, ATTN: AMSTR-MCTS, 4300 Goodfellow Boulevard, St. Louis, MO 63120-1798. A reply will be furnished to you.

TABLE OF CONTENTS

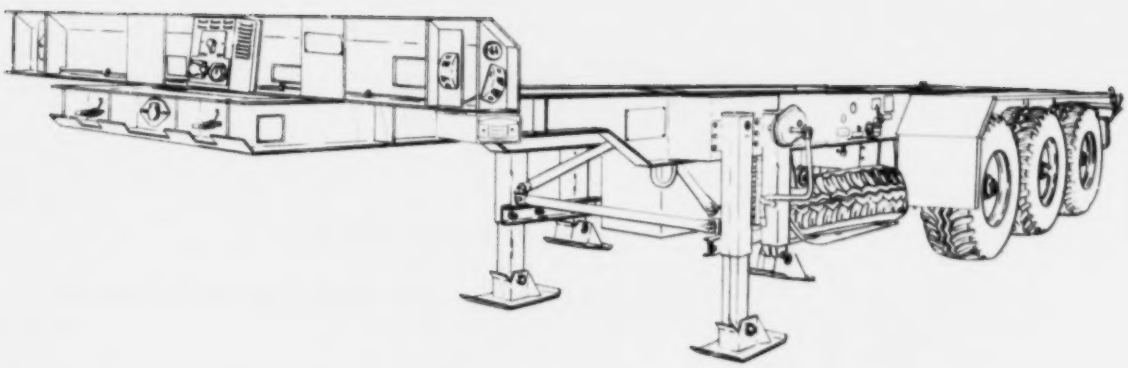
		Page
CHAPTER 1.	INTRODUCTION	1-1
Section I.	General Information	1-1
Section II.	Equipment Description and Data	1-1
Section III.	Technical Principles of Operation	1-9
CHAPTER 2.	OPERATING INSTRUCTIONS	2-1
Section I.	Description and Use of Operator's Controls and Indicators	2-1
Section II.	Operator's Preventive Maintenance Checks and Services (PMCS)	2-6
Section III.	Operation Under Usual Conditions	2-10
Section IV.	Operation Under Unusual Conditions	2-18
CHAPTER 3.	OPERATOR MAINTENANCE INSTRUCTIONS	3-1
Section I.	Lubrication Instructions	3-1
Section II.	Troubleshooting	3-1
Section III.	Maintenance Procedures	3-1
CHAPTER 4.	ORGANIZATIONAL MAINTENANCE INSTRUCTIONS	4-1
Section I.	Repair Parts, Special Tools and Equipment	4-1
Section II.	Organizational Preventive Maintenance Checks and Services (PMCS)	4-1
Section III.	Organizational Troubleshooting	4-6
Section IV.	Maintenance Procedures	4-11
Section V.	Preparation for Storage or Shipment	4-59

TABLE OF CONTENTS (Cont)

		Page
CHAPTER 5.	DIRECT/GENERAL SUPPORT MAINTENANCE INSTRUCTIONS	5-1
Section I.	Repair Parts, Special Tools, and Equipment	5-1
Section II.	Troubleshooting	5-1
Section III.	Maintenance Procedures	5-1
APPENDIX A.	REFERENCES	A-1
APPENDIX B.	MAINTENANCE ALLOCATION CHART	B-1
APPENDIX C.	COMPONENTS OF END ITEM AND BASIC ISSUE ITEMS LISTS	C-1
APPENDIX D.	ADDITIONAL AUTHORIZATION LIST	D-1
APPENDIX E.	EXPENDABLE/DURABLE SUPPLIES AND MATERIALS LIST	E-1
APPENDIX F.	STOWAGE AND SIGN GUIDE	F-1

LIST OF TABLES

Number	Title	Page
	OPERATING INSTRUCTIONS	
2-1	Operator's Preventive Maintenance Checks and Services	2-7
	ORGANIZATIONAL MAINTENANCE INSTRUCTIONS	
4-1	Organizational Preventive Maintenance Checks and Services	4-2
4-2	Organizational Troubleshooting	4-6



CHAPTER 1

INTRODUCTION

Section I. GENERAL INFORMATION

1.1. GENERAL.

1.1.1 SCOPE. This manual contains operation and maintenance instructions to be performed at Operator, Organizational, and Direct/General Support Maintenance levels. These instructions pertain to the ADCOR 13225E3025 Semitrailer Chassis. The chassis provides for the support, retention, and transportation of a standard 30 ft. (9.15 m) van body.

1.1.2 MAINTENANCE FORMS AND RECORDS. Department of the Army forms and procedures used for equipment maintenance will be those prescribed by DA PAM 738-750, The Army Maintenance Management System (TAMMS).

1.1.3 REPORTING EQUIPMENT IMPROVEMENTS (EIR's). If the chassis manual needs improvement, let us know. Send us an EIR. You, the user, are the only one who can tell us what you do not like about your equipment. Let us know why you do not like the design or performance. Put it on an SF 368 (Quality Deficiency Report). Mail it to us at: US Army Troop Support Command, ATTN: AMSTR-QX, 4300 Goodfellow Boulevard, St. Louis, MO 63120-1798. We'll send you a reply.

1.1.4 DESTRUCTION OF MATERIEL TO PREVENT ENEMY USE. For information on destruction of materiel to prevent enemy use, refer to TM 750-244-3, Procedures for Destruction of Equipment to Prevent Enemy Use.

1.1.5 WARRANTY INFORMATION. This chassis has no items under warranty.

Section II. EQUIPMENT DESCRIPTION AND DATA

1.2. EQUIPMENT DESCRIPTION.

1.2.1 EQUIPMENT PURPOSE, CAPABILITIES, AND FEATURES.

Purpose

Provide a means of supporting, retaining, and transporting a standard 30 ft. (9.15 m) van body over primary highways, secondary roads, open fields, rolling hills, and rough, off-road terrain.

Capabilities and Features

All-weather operational.

Independent corner leveling jacks for all parking surface applications.

Air spring suspension for a soft, level ride under all conditions.

Heavy-duty shock absorbers which promote longer tire life and smoother ride.

Automatic ride height control maintaining chassis frame-to-axle clearance with varying loads.

Emergency air brake system.

Positive van body-to-chassis bayonet-type twist locks.

Hubodometer for accurate mileage recording.

Spacious tool compartment.

Tri-axle suspension with high flotation, tubeless tires.

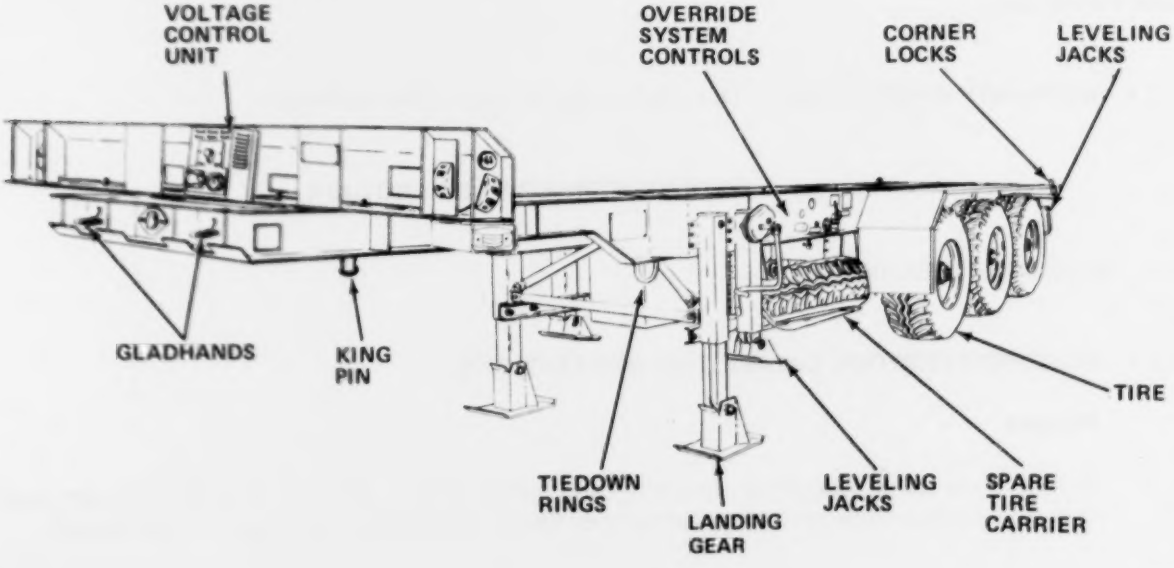
High yield point, all welded steel construction frame.

Automatic brake adjusters.

Air and sea transportable.

1.2.2 LOCATION AND DESCRIPTION OF MAJOR COMPONENTS.

1.2.2.1 FRONT AND ROADSIDE.



BLACKOUT MARKER LIGHT. Rectangular red-lensed light for use during night road march.

VOLTAGE CONTROL UNIT. Provides for 12 Vdc or 24 Vdc electrical interconnect between tractor and chassis.

OVERRIDE SYSTEM CONTROLS. Provide operator with manual control over air suspension system.

CORNER LOCKS. Secure van body to chassis.

LEVELING JACKS. Individually operated, mechanical, telescopic jacks which provide leveling of chassis on rough or uneven surfaces.

TIRES. Size 18-22.5, tubeless, 18-ply tires.

SPARE TIRE CARRIER. Retains spare tire.

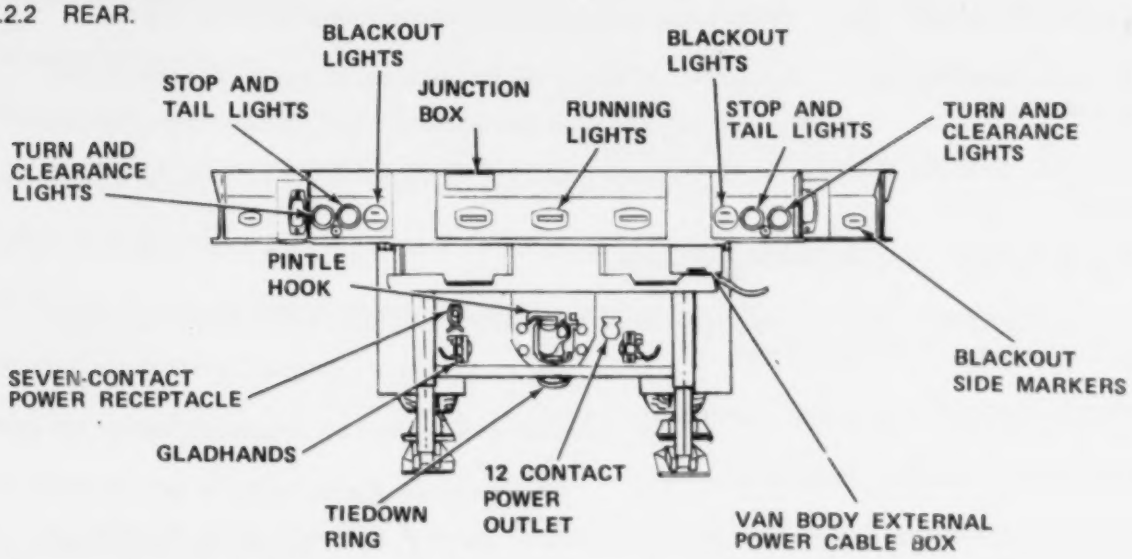
LANDING GEAR. Twin telescopic, adjustable support legs with wide mud shoes. Provide support of chassis when tractor is detached.

TIEDOWN RINGS. Provide fixed attach points to secure chassis for shipment.

KING PIN. A pivot pin which mates with fifth wheel assembly of tractor.

GLADHANDS. Provide for normal service and emergency air line interconnect between tractor and chassis.

1.2.2.2 REAR.



TURN AND CLEARANCE LIGHTS. Circular, red-lensed, double-filament, combination turn and clearance lights.

STOP AND TAIL LIGHTS. Circular, red-lensed, double-filament, combination stop and tail lights.

BLACKOUT MARKER LIGHT. Rectangular, red-lensed light for use during night road march.

BLACKOUT STOP LIGHTS. Lens contains two rectangular slots used during night road march.

JUNCTION BOX. Provides for interconnect between chassis basic electrical system and 12 Vdc line to van body external power cable box.

RUNNING LIGHTS. Rectangular red-lensed lights.

TWELVE-CONTACT POWER OUTLET. Provides for 24 Vdc electrical power interconnect between chassis and additional towed vehicle.

VAN BODY EXTERNAL POWER CABLE BOX. Houses 12 Vdc, two-lead electrical cable assembly which provides interconnect between chassis power supply and van body interior dome lights.

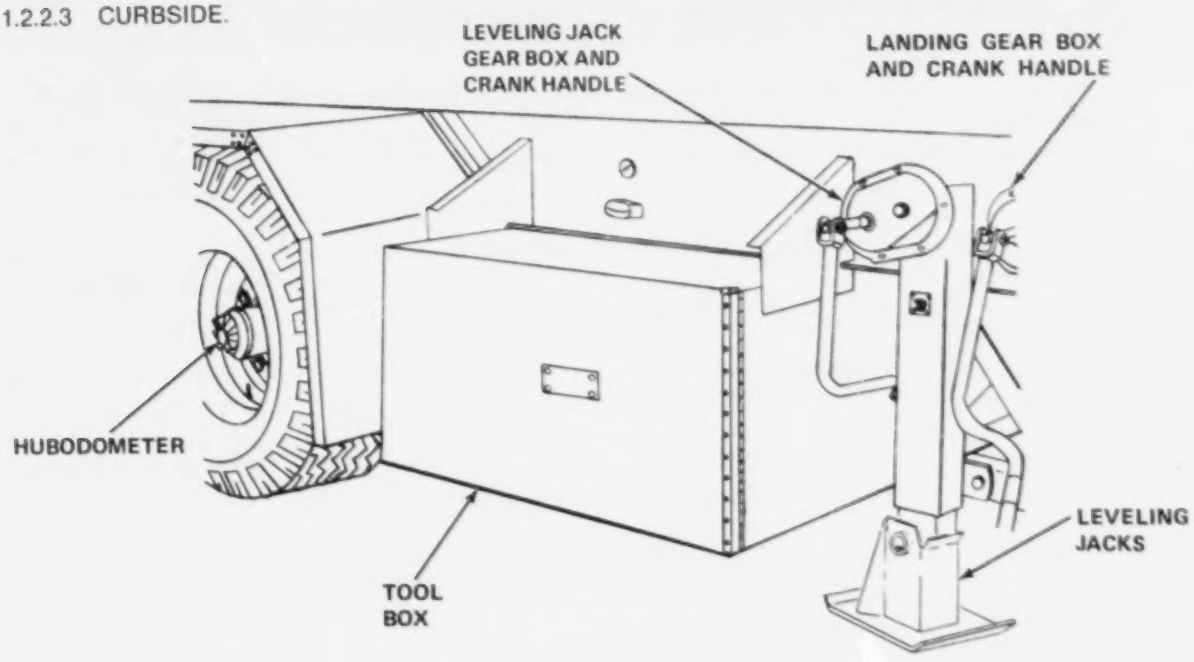
GLADHANDS. Provide for service and emergency air lines interconnect between chassis and additional towed vehicle.

TIEDOWN RING. Provides fixed attach point to secure chassis for shipment.

SEVEN-CONTACT POWER RECEPTACLE. Provides for 12 Vdc electrical power interconnect between chassis and additional towed vehicle.

PINTLE HOOK. Spring-locked hook provides attach point for towing of additional vehicle.

1.2.2.3 CURBSIDE.



LEVELING JACKS. Mechanical telescopic jacks which provide leveling of trailer on rough or uneven terrain.

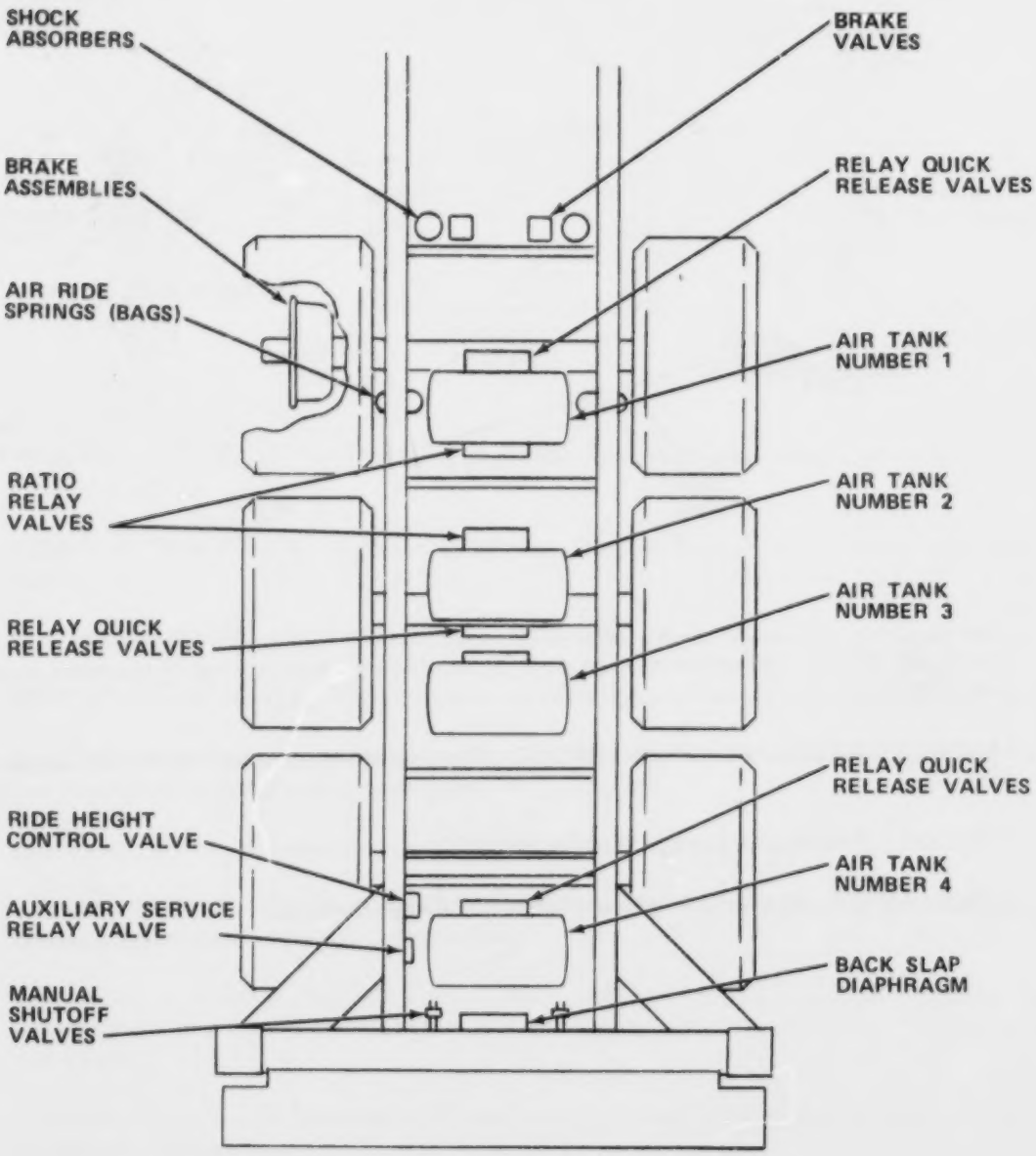
LANDING GEAR BOX AND CRANK HANDLE. Device used to manually raise and lower landing gear.

TOOLBOX. Provides for storage of tools, jack, etc.

HUBODOMETER. Converts wheel rotations into mileage readings.

1.2.2.4 INTERFRAME.

BRAKE VALVES. Brake application and release chambers. Mechanically attached through linkage to S-cam actuated brake shoes. Valves are air diaphragm operated.



RELAY QUICK RELEASE VALVES. One for each pair of wheel brakes. Control actuation and release of brake pressure.

AIR TANK NUMBER 1. Stores pressurized air used in front axle brake actuation system.

AIR TANK NUMBER 2. Stores pressurized air for center axle brake actuation system.

AIR TANK NUMBER 3. Stores pressurized air for air ride system only.

AIR TANK NUMBER 4. Stores pressurized air for rear axle brake actuation system.

BACK SLAP DIAPHRAGM. Provides pintle hook with load dampener when towed vehicle is attached to chassis.

MANUAL SHUTOFF VALVES. Means of shutting off chassis air supply to rear gladhands.

AUXILIARY SERVICE RELAY VALVE. Provides brake control over auxiliary towed vehicle.

RIDE HEIGHT CONTROL VALVE. Automatically maintains a preset clearance between chassis frame and axles by either inflating or deflating air ride springs.

RATIO RELAY VALVES. One for each pair of wheel brakes. Sense and maintain differential between control and emergency air pressures required for proper brake functioning.

AIR RIDE SPRINGS (BAGS). Two air-filled, rubber bags per axle provide a desired load height and a soft, level ride under all conditions.

BRAKE ASSEMBLIES. Consists of riveted brake linings, springs and associated hardware. Self-adjustors ensure proper brake lining contact.

SHOCK ABSORBERS. Two large bore shock absorbers per axle keep tires in constant contact with road and dampen sudden shocks.

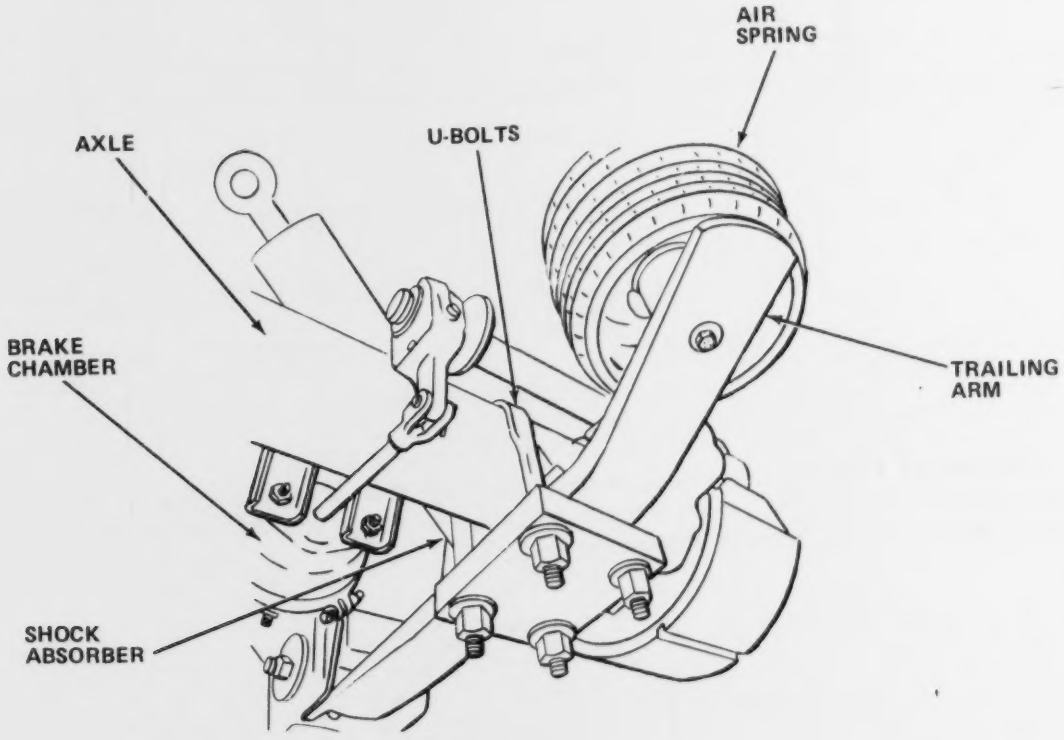
1.2.3 EQUIPMENT DATA.

Dimensions	
Width	8 ft. 0 in. (2.44 m)
Height	4 ft. 6 in. (1.37 m)
Length	33 ft. 6 in. (10.2 m)
Maximum Gross Weight	11,440 lbs. (5194 kg)
Power Requirements	
Primary Power	12 Vdc commercial system (negative ground) or 24 Vdc military system
Wheels and Tires	
Wheel Type	Firestone Duplex Disc wheels
Tire Type and Size	Firestone Duplex Super All Traction 18/22.5; 18-ply rating; load rating J; B-329 tubeless
Tire Pressure	85 psi (5.98 kg/cm2)
Weight Distribution	No axle is loaded in excess of 20,000 lb (9072 kg)
SAE J701 Interchange Coupling Dimensions	
Radius (LCW)	7 ft. 6 in. (2.29 m)
Swing Radius (SR)	4 ft. 10 in. (1.47 m)
Kingpin Setting (KP)	Range 24 to 36 in. (0.61 to 0.92 m)
Height (FWH)	4 ft. 4 in. (1.3 m)

Section III. TECHNICAL PRINCIPLES OF OPERATION

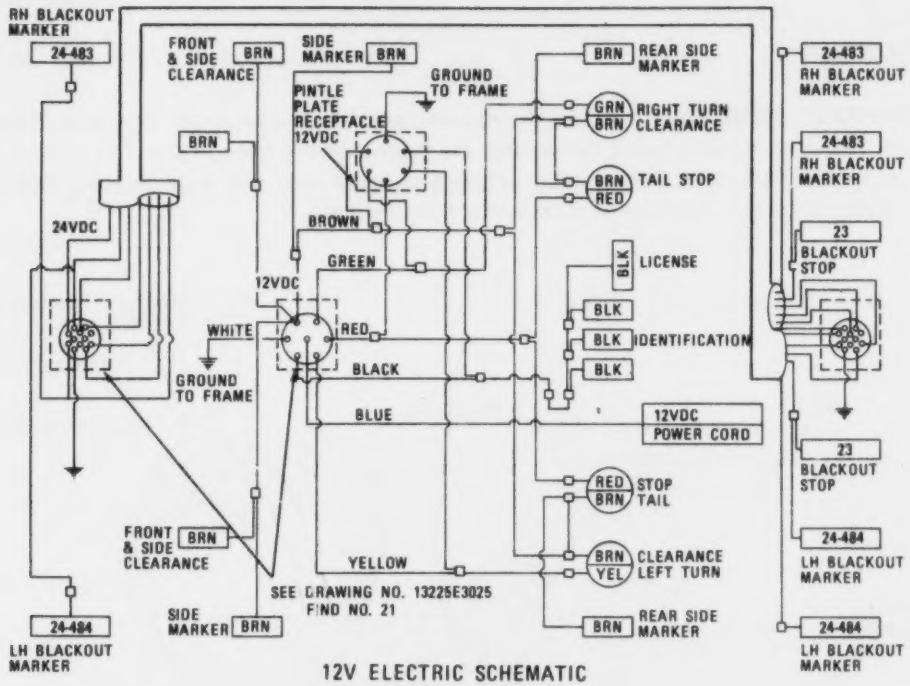
1.3. DESCRIPTION.

1.3.1 MAIN FRAME ASSEMBLY. A ladder-type welded steel frame which forms the basic structure of the chassis. The toolbox and spare tire carrier are bolted to the frame rails. The suspension system is mounted under the rails and welded steel fenders contain rock and mud guards. The pneumatic and electrical systems are mounted to the frame at various points.



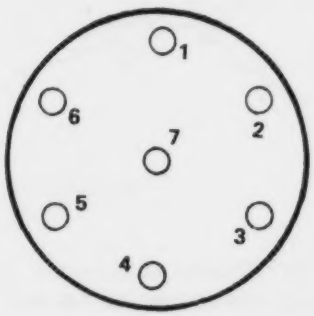
1.3.2 SUSPENSION SYSTEM. The tridem (3-axle) suspension consists of parallel trailing arms to which the axle is bolted. Pneumatic air bags are connected between the trailing arms and frame to cushion the load and maintain proper ride height. Shock absorbers are mounted between frame and axle to provide better control over rough roads by absorbing sudden shock.

1.3.3 BRAKE SYSTEM. Stops wheel rotation with internal expanding brake shoes. A cam driven by the brake chamber through a linkage arrangement expands the shoes against the drum. The brake chamber, utilizing pressure differentials, determines the amount of force the cam applies to the shoes. An automatic slack adjuster maintains proper linkage adjustment.



12V ELECTRIC SCHEMATIC

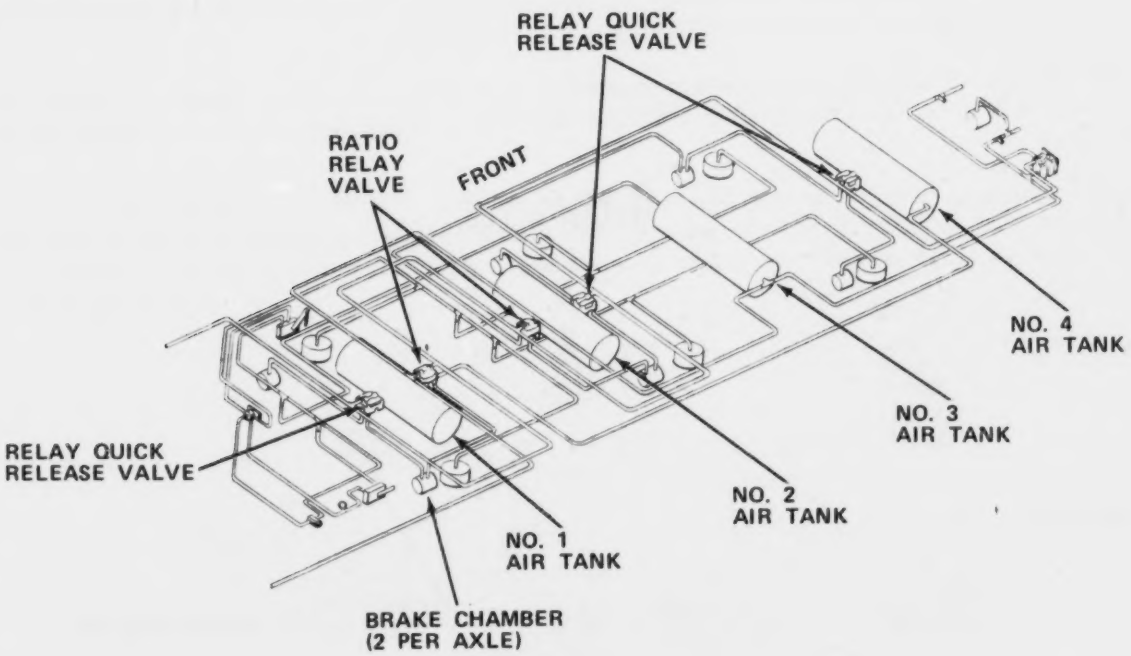
1.3.4 ELECTRICAL SYSTEM. Provides power for the illumination of chassis lights. All power and control is supplied by the towing vehicle through a seven prong male plug located on the chassis front crossmember. Each prong supplies power as follows:



Prong Number	Application
1	Grounded to chassis frame.
2	To front and side clearance lights, side marker lights and right rear side marker, clearance and tail lights.
3	Right turn signal light.

Prong Number	Application
4	Rear stop lights.
5	Left turn signal light.
6	To left rear side marker, clearance and tail lights, rear identification and license plate lights.
7 (center)	Auxiliary line.

A voltage control unit located at the front of the chassis allows either 12 Vdc or 24 Vdc tractor power supply to be used.



1.3.5 PNEUMATIC SYSTEM. Controls the braking and air ride systems. It consists of:

Air Storage Tanks (1.3.5.1)

Relay Quick Release (1.3.5.2)

Ratio Relay Valve (1.3.5.3)

Brake Chamber (1.3.5.4)

Auxiliary Service Relay (1.3.5.5)

Height Control Valve (1.3.5.6)

Override Assembly (1.3.5.7)

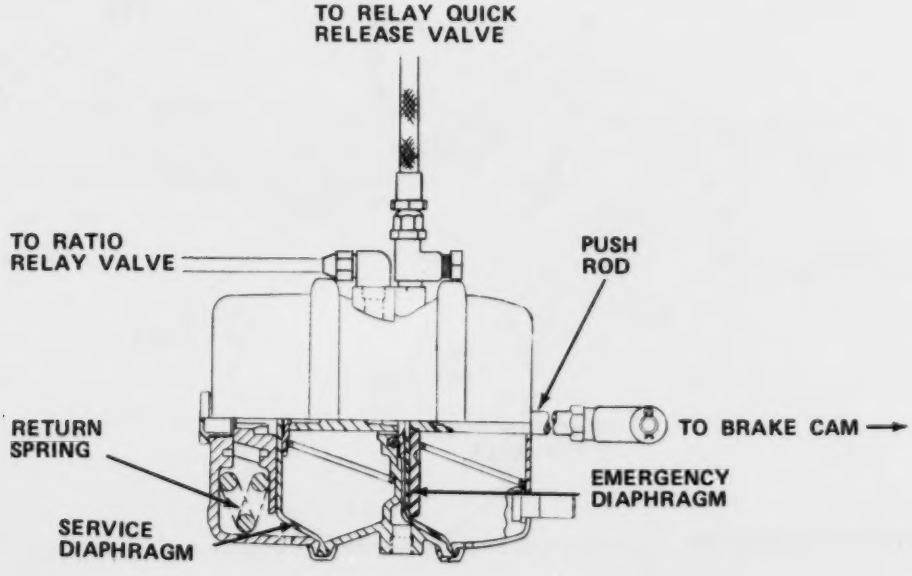
Air Spring (1.3.5.8)

1.3.5.1 AIR STORAGE TANKS. Stores pressurized air for brake and air ride actuation. Tanks 1, 2 and 4 supply brake system while tank 3 supplies air ride system only.

1.3.5.2 RELAY QUICK RELEASE VALVES. Speeds up application and release of brakes by shortening the length of tubing through which air from the brake valve must pass. The valves are connected directly to the air storage tanks to utilize the pressurized storage air for brake actuation.

1.3.5.3 RATIO RELAY VALVE. Determines pressure differential between service and emergency line to apply or release pressure to brake chamber emergency diaphragm.

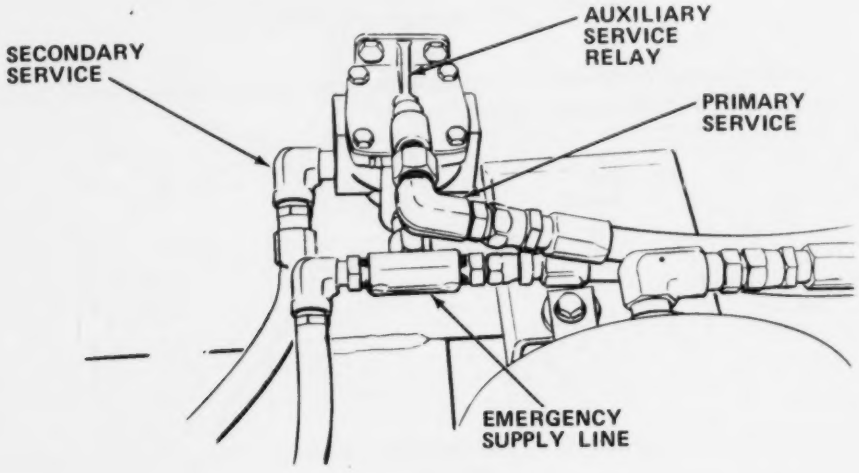
1.3.5.4 BRAKE CHAMBER. Through two counteracting diaphragms, converts pneumatic force to linear mechanical force. The linear force is utilized by the brake system to expand the brake shoes against the brake drum.



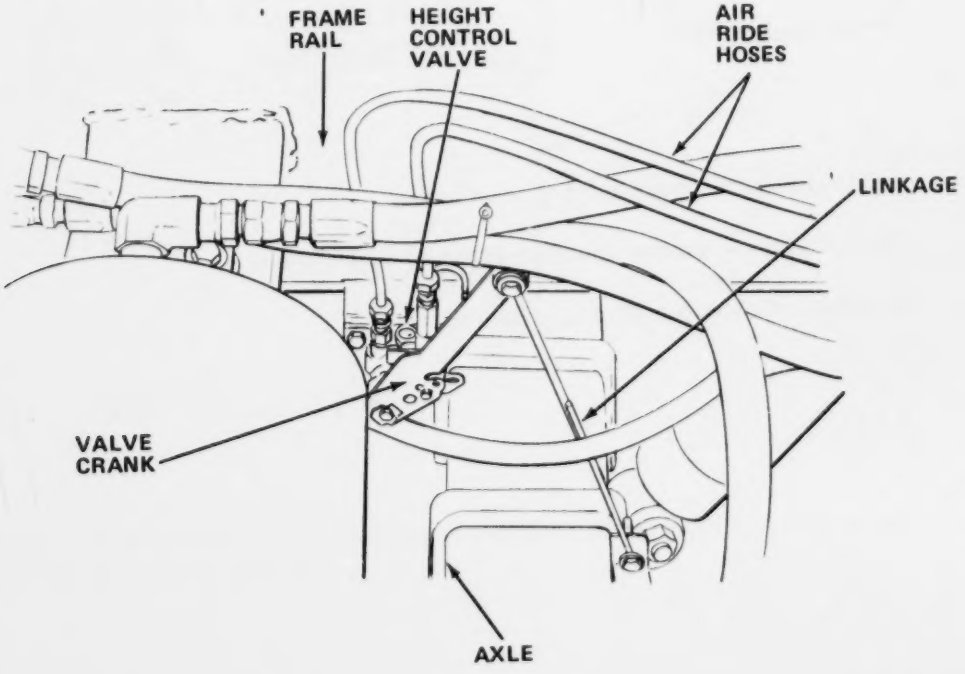
a. Emergency Diaphragm. Provides fail-safe emergency braking in the event system pressure is lost. The high pressure return spring, which provides adequate force for brake activation, is counteracted by the emergency diaphragm under normal operating conditions. The diaphragm is connected to the pushrod and controlled by the ratio relay valve.

b. Return Spring. Provides 1800 lbs (817.2 kg) of force to the pushrod for brake application. The spring is counteracted by the emergency diaphragm air pressure and extends to apply brakes if emergency air pressure decreases.

c. Service Diaphragm. Counteracts the emergency diaphragm to provide service brake application. It is connected to the pushrod and controlled by the relay quick release valve. As pressure is applied to the diaphragm, the pushrod extends to apply force to brakes.



1.3.5.5 AUXILIARY SERVICE RELAY. Speed up application and release of brakes on auxiliary towed chassis by shortening the length of tubing through which air must pass from the brake valve. As primary brake system pressure increases, the relay opens allowing emergency system pressure to supply the secondary service system.

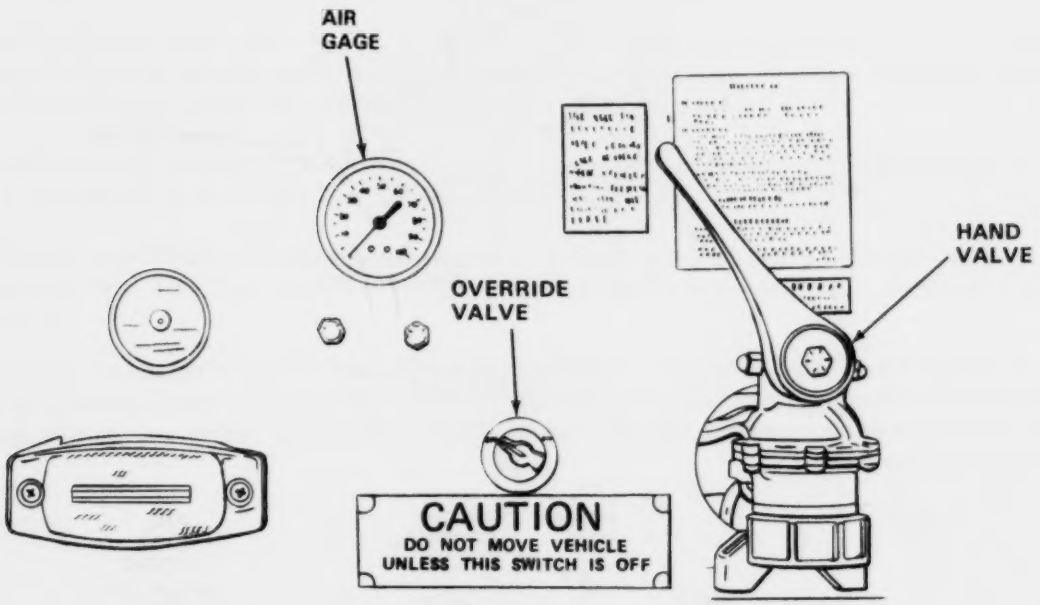


1.3.5.6 HEIGHT CONTROL VALVE. Maintains constant chassis ride height by determining distance between chassis frame and wheel axle. The valve opens to add or remove air in air bags.

1.3.5.7 OVERRIDE ASSEMBLY. Allows inflation and deflation of air springs independently of height control valve. It consists of:

NOTE

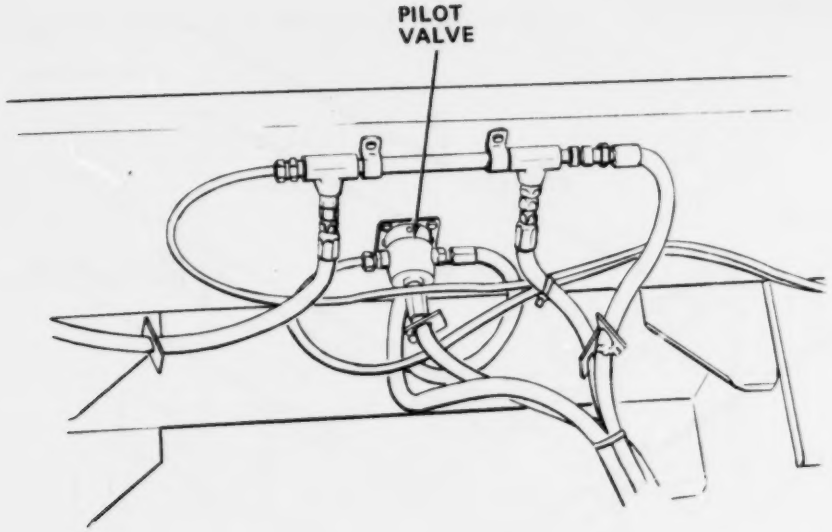
Physical location of operating instructions, instructional data, decals, and reflector may vary between trailer chassis.



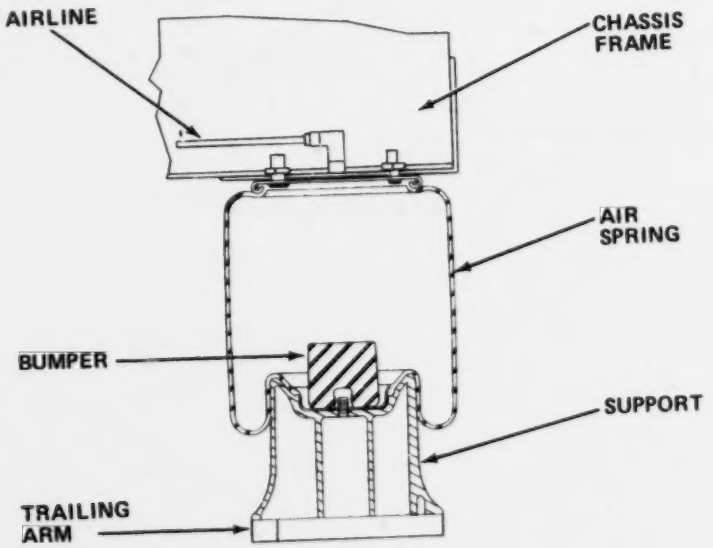
a. Hand Valve. Allows manual filling of air spring.

b. Override Valve. Bypasses operation of height control valve.

c. Air Gage. Indicates pressure in air springs.

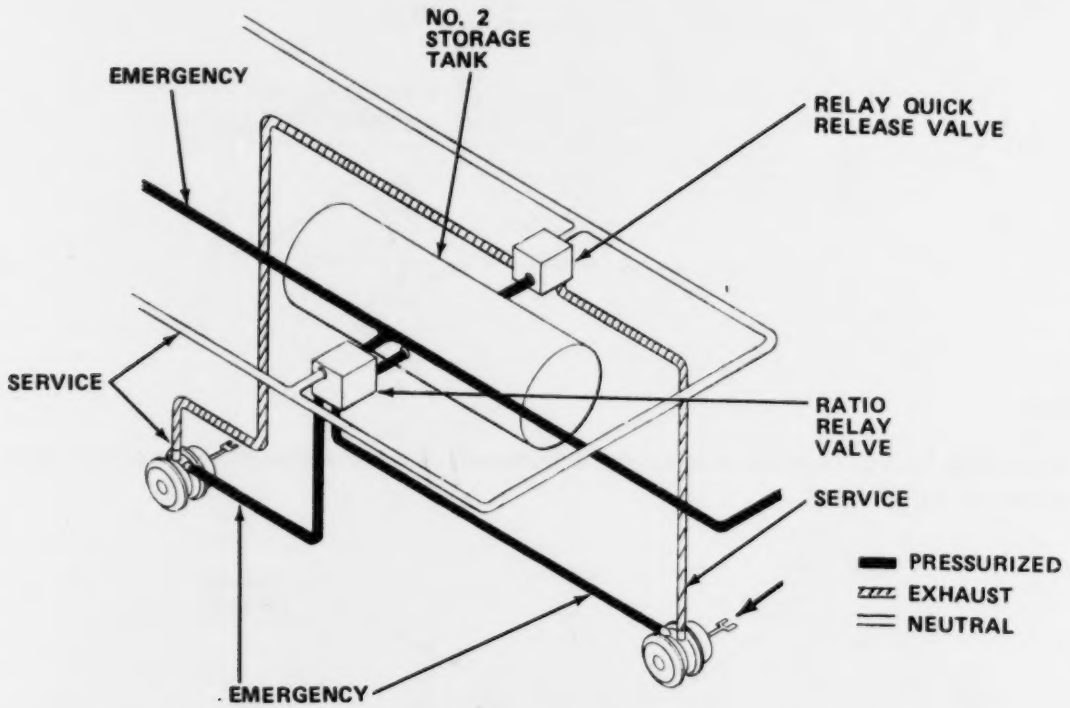


d. Pilot Valve. Utilizes override valve air signal to determine if hand valve or height control valve control air spring filling.

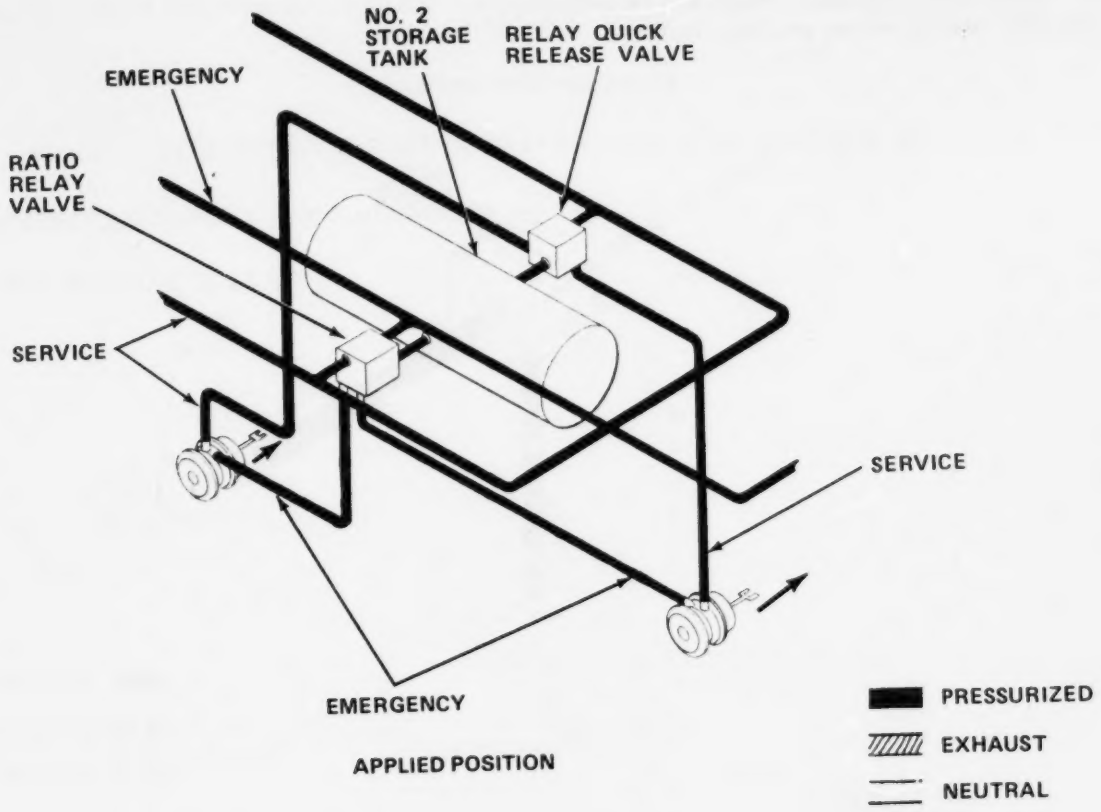


1.3.5.8 AIR SPRING. A flexible air-inflated chamber in which the air pressure is controlled and varied to support the load and absorb road shocks.

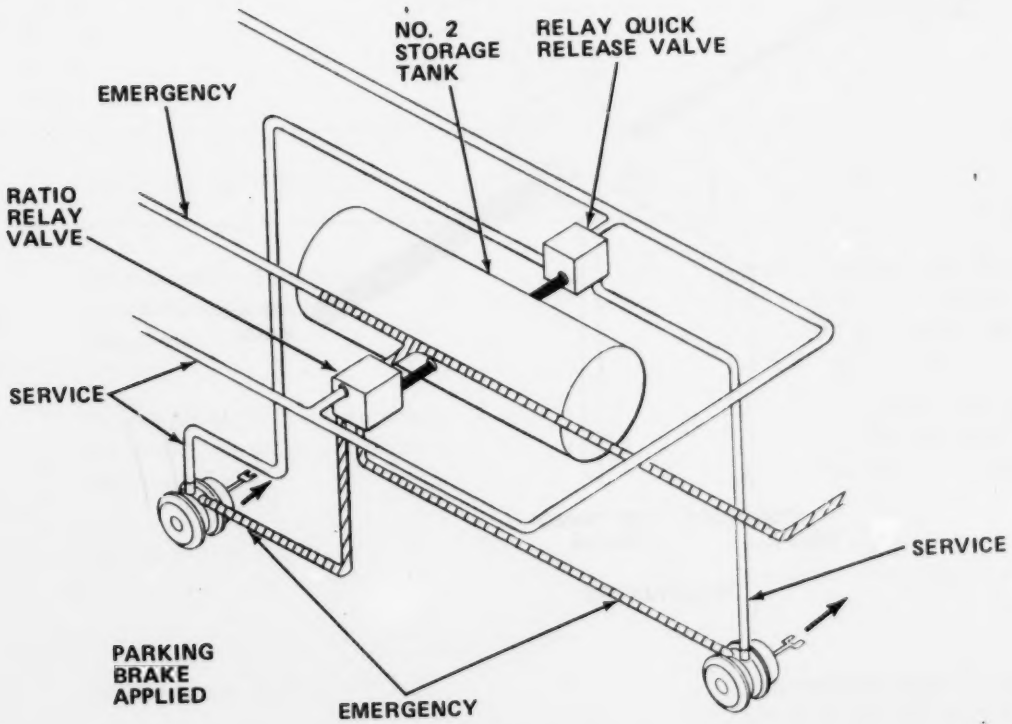
1.3.6 BRAKE SYSTEM OPERATION. The following illustrates the air flow paths during brake system operation.



RELEASED POSITION

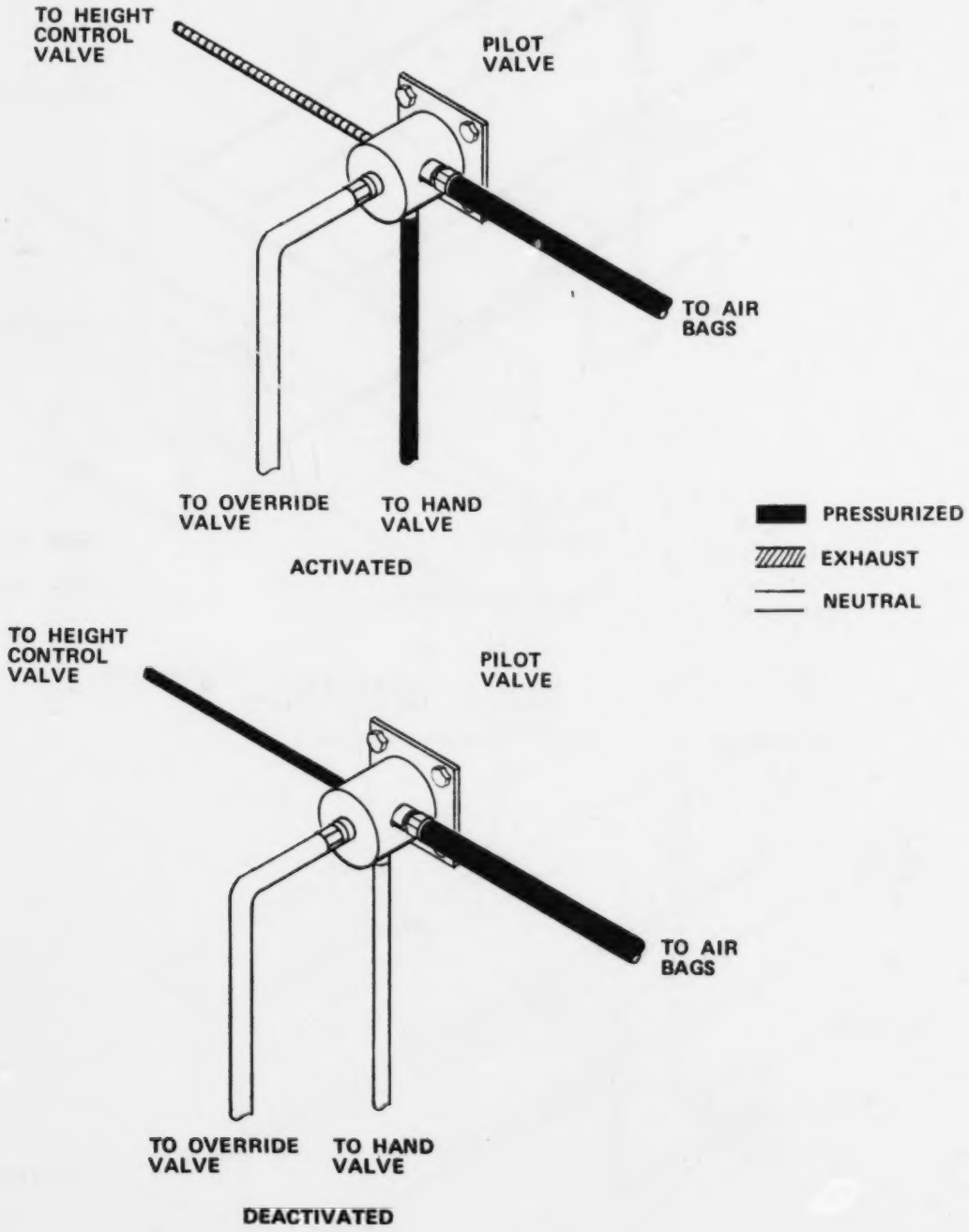


APPLIED POSITION



PARKED POSITION

1.3.7 OVERRIDE ASSEMBLY PILOT VALVE OPERATION. The following illustrates the air flow paths during pilot valve activation and deactivation.



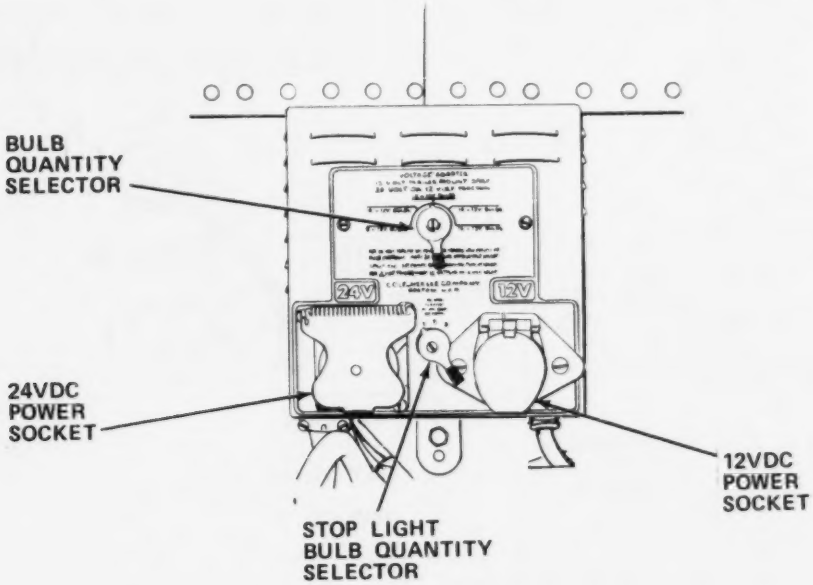
CHAPTER 2

OPERATING INSTRUCTIONS

Section I. DESCRIPTION AND USE OF OPERATOR'S CONTROLS AND INDICATORS

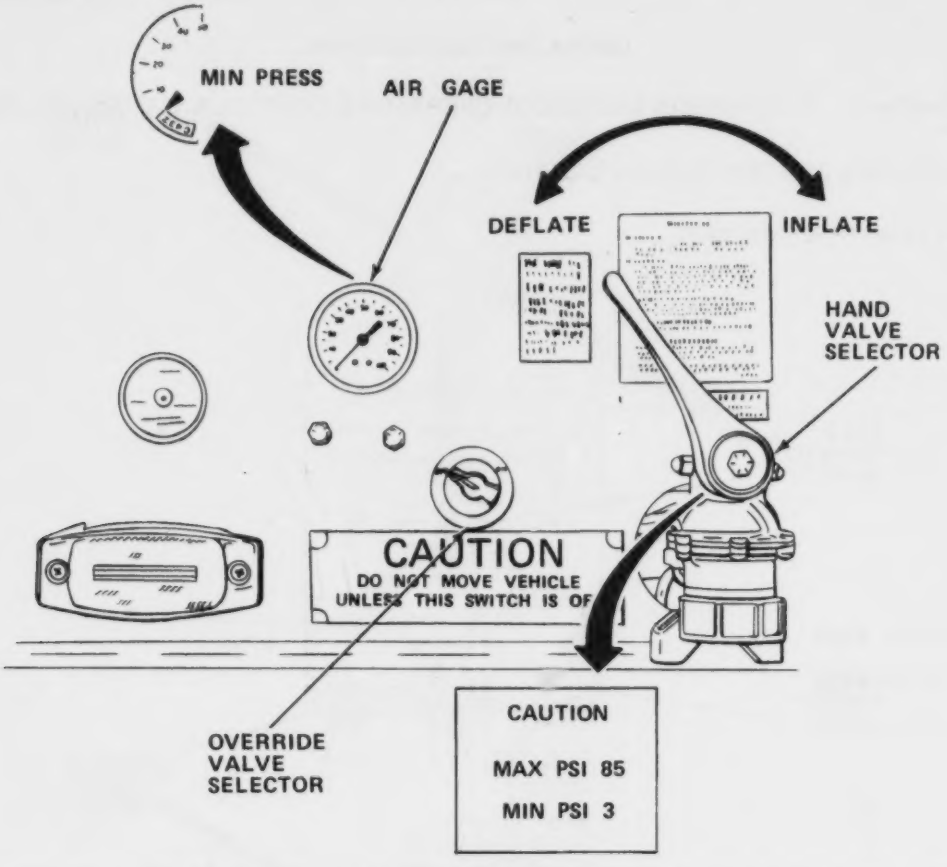
2.1. OPERATOR'S CONTROLS AND INDICATORS

2.1.1 VOLTAGE CONTROL UNIT.



CONTROL OR INDICATOR	FUNCTION
Bulb Quantity Selector (Used only when 24 Vdc plug is installed.)	Used to adjust electrical system for number of 12 V bulbs mounted on chassis. Stop light bulbs not included.
Stop Light Bulb Quantity Selector (Used only when 24 Vdc plug is installed.)	Used to adjust electrical system for number of 12 V stop light bulbs mounted on chassis.
24 Vdc Power Socket	Interconnect point between tractor with 24 Vdc plug and chassis.
12 Vdc Power Socket	Interconnect point between tractor with 12 Vdc plug and chassis.

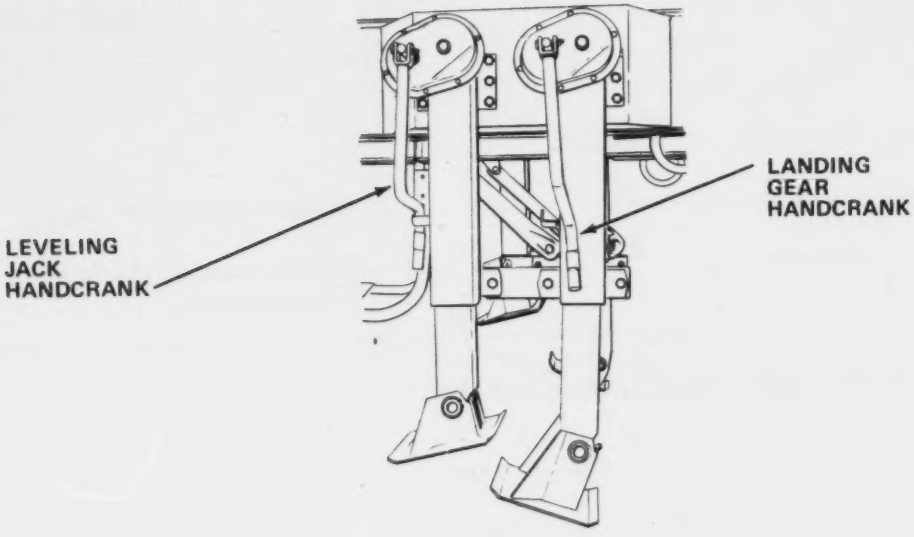
2.1.2 OVERRIDE ASSEMBLY.



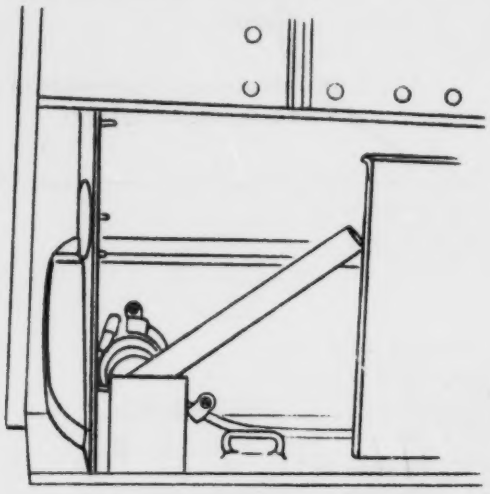
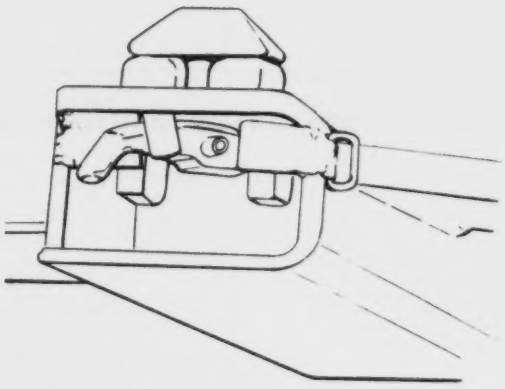
CONTROL OR INDICATOR	FUNCTION
Override Valve Selector	Two-position selector: OFF - Air ride suspension system under control of height control valve. ON - Height control valve deactivated. Air ride suspension system under control of hand valve.
Hand Valve Lever	Two-position lever: RIGHT - Inflates air springs; load rises.

CONTROL OR INDICATOR	FUNCTION
	LEFT - Deflates air springs; load lowers.
Air Gage (0-100 psi in 1 psi increments)	Indicates amount of pressure in air ride suspension system.

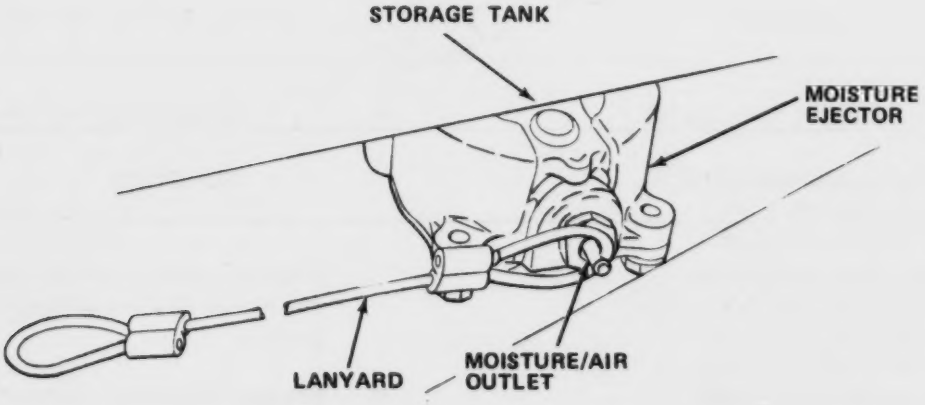
2.1.3 SUPPORT, LEVELING AND LOCKING.



CONTROL OR INDICATOR	FUNCTION
Landing Gear Handcrank	Engages gearbox which raises and lowers chassis landing gear.
Leveling Jack Handcrank	Engages individual gearbox which raises and lowers leveling jacks.

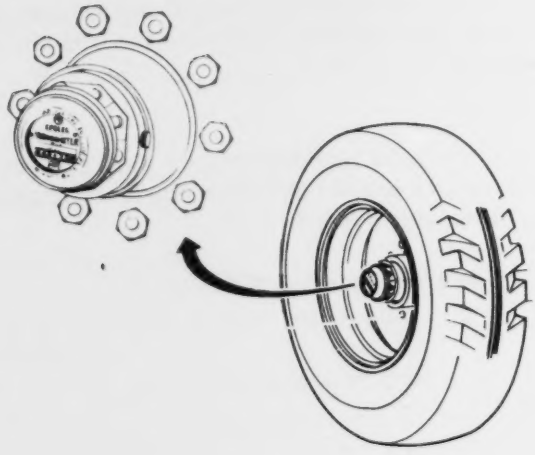
CONTROL OR INDICATOR	FUNCTION
 FRONT CONTAINER LOCKS	 REAR CONTAINER LOCKS
Corner Lock Securing Lever	Provides means of securing van body to chassis.

2.1.4 AIR STORAGE TANK MOISTURE EJECTOR LANYARDS.



CONTROL OR INDICATOR	FUNCTION
Lanyard	Provides means of removing moisture and/or air from air storage tanks. Lanyards are attached to moisture ejector valves and bottom of roadside rail of following locations: no. 1 tank behind no. 1 tire, no. 2 and 3 tanks behind no. 2 tire, and no. 4 tank behind no. 3 tire.

2.1.5 HUBODOMETER.



CONTROL OR INDICATOR	FUNCTION
Hubodometer	Converts no. 3 axle curbside wheel rotation to miles. Records miles to six digits and tenths of miles.

Section II. OPERATOR'S PREVENTIVE MAINTENANCE CHECKS AND SERVICES

2.2. PMCS PROCEDURES.

2.2.1 INTRODUCTION.

a. Always keep in mind the WARNINGS and CAUTIONS when performing PMCS. Table 2-1 lists the PMCS procedures to be performed by the operator. Be sure to perform the PMCS at the frequency indicated by the INTERVAL codes in the table.

b. If your equipment fails to operate, troubleshoot with the proper equipment. Report any deficiencies in accordance with DA PAM 738-750.

NOTE

If the equipment must be kept in continuous operation, check and service only those items that can safely be checked and serviced without disturbing operation. Make the complete checks and services when the equipment can be shut down.

c. The numbers found in the ITEM NUMBER column shall be used as a source of item numbers for the TM NUMBER column on DA Form 2404, Equipment Inspection and Maintenance Worksheet, in recording the results of PMCS.

d. List of tools and materials required for PMCS is as follows:

Item	Quantity
Tire Pressure Gage	1 ea

Table 2-1. OPERATOR'S PREVENTIVE MAINTENANCE CHECKS AND SERVICES

B - Before
D - During
A - After

W - Weekly
M - Monthly
Q - Quarterly

AN - Annually
S - Semiannually
BI - Biannually

(Number) - Hundreds of Hours

ITEM NO.	INTERVAL	ITEM TO BE INSPECTED PROCEDURE	For Readiness Reporting, Equipment Is Not Ready/ Available If:
1	B	INSPECT VEHICLE EQUIPMENT. Prior to hookup of towing vehicle, check tools, mounted equipment, publications, and necessary forms.	
2	B	INSPECT TOWING CONNECTIONS. 1. Hook up towing vehicle. 2. Check kingpin and air and electrical connections. 3. Check for leaks.	
3	B/A	INSPECT LANDING GEAR. 1. Check landing gear for damage. 2. Engage landing gear handle and raise landing gear. 3. Note any binding or difficulty in raising landing gear.	
4	B/A	INSPECT ELECTRICAL SYSTEM. 1. Inspect wiring conduit, light assemblies, clips, receptacles, shells, grommets, and electrical access covers for correct assembly and condition. 2. Operate light control of towing vehicle. Inspect lights for operation or broken lens.	System inoperable.

Table 2-1. OPERATOR'S PREVENTIVE MAINTENANCE CHECKS AND SERVICES (Cont)

B - Before, D - During, A - After | W - Weekly, M - Monthly, Q - Quarterly | AN - Annually, S - Semiannually, BI - Biannually | (Number) - Hundreds of Hours

ITEM NO.	INTERVAL	ITEM TO BE INSPECTED PROCEDURE	For Readiness Reporting, Equipment Is Not Ready/ Available If:
5	B/D	INSPECT AIR TANKS, HOSES, AND PRESSURE.	
		1. Visually check and listen for leaks.	System will not hold pressure.
		2. Inspect for leaks in air brake system by stopping engine in towing vehicle when air pressure is maximum.	
		3. Note any drop in pressure on tractor gage within one minute.	
6	B	INSPECT AIR TANKS.	
		Remove water and sludge from system daily, especially during cold weather. This prevents freezing and obstruction of lines and valves.	
7	B	INSPECT AIR CHAMBERS, SPRINGS, AND SLACK ADJUSTERS.	
		Check condition of air chambers, air ride springs, and slack adjusters.	
8	B	INSPECT HUBCAPS.	
		Clean Hubcaps. Check for cracks.	
9	B	INSPECT WHEEL STUDS AND NUTS.	
		Check wheel studs and nuts. Make sure that they are in position and tight.	
10	B	INSPECT TIRES.	
		Remove all objects lodged between treads.	
11	B	INSPECT TIRE PRESSURE.	
		Check pressure. Inflate to 85 psi (5.98 kg/cm^2).	

Table 2-1. OPERATOR'S PREVENTIVE MAINTENANCE CHECKS AND SERVICES (Cont)

B - Before
D - During
A - After

W - Weekly
M - Monthly
Q - Quarterly

AN - Annually
S - Semiannually
BI - Biannually

(Number) - Hundreds of Hours

ITEM NO.	INTERVAL	ITEM TO BE INSPECTED PROCEDURE	For Readiness Reporting, Equipment Is Not Ready/ Available If:
12	B	INSPECT SPARE TIRE. 1. Check spare tire to insure it is secure within the carrier. 2. Inspect the carrier bracketing for proper mounting.	
13	B	INSPECT MUD FLAPS. Inspect mud flaps for proper attachment, breaks and cracks.	
14	D	INSPECT TRACKING. With the vehicle moving straight ahead, visually check if there is any tendency for the chassis to wander or pull to the side. Such conditions are the result of axle misalignment or improperly adjusted wheel bearings or brakes.	Excessive wandering or pulling to one side.
15	B/D	INSPECT BRAKES. Before moving apply brakes. Observe that they operate properly.	Brakes inoperative.
16	A	INSPECT PHYSICAL CONDITION. 1. Wash and clean chassis if required. 2. Observe condition of paint and legibility of markings and plates.	
17	A	INSPECT AIR TANKS. Drain air after each operation.	

Section III. OPERATION UNDER USUAL CONDITIONS

2.3. ASSEMBLY AND PREPARATION FOR USE.

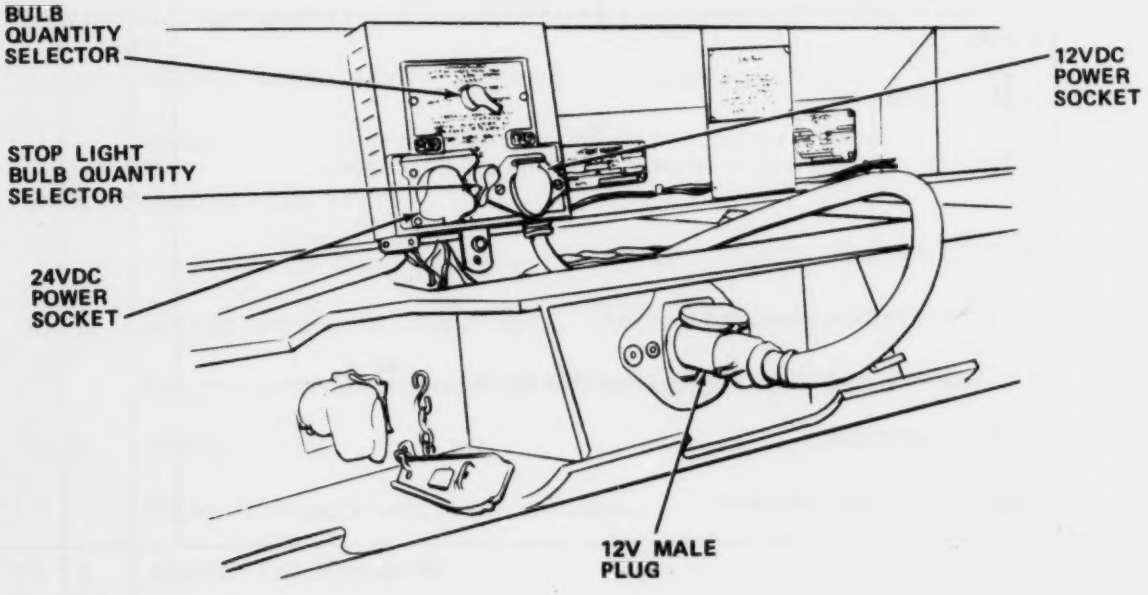
2.3.1 OPERATING PROCEDURES.

1. Perform preventive maintenance checks and services as specified in Table 2-1.
2. Be sure that landing gear is down.
3. Move crank handles from stowed position and raise leveling jacks to full up position. Stow handles.

CAUTION

BE SURE VOLTAGE CONTROL UNIT OUTPUT CABLE IS PLUGGED INTO CHASSIS ELECTRICAL CONNECTION BEFORE PROCEEDING.

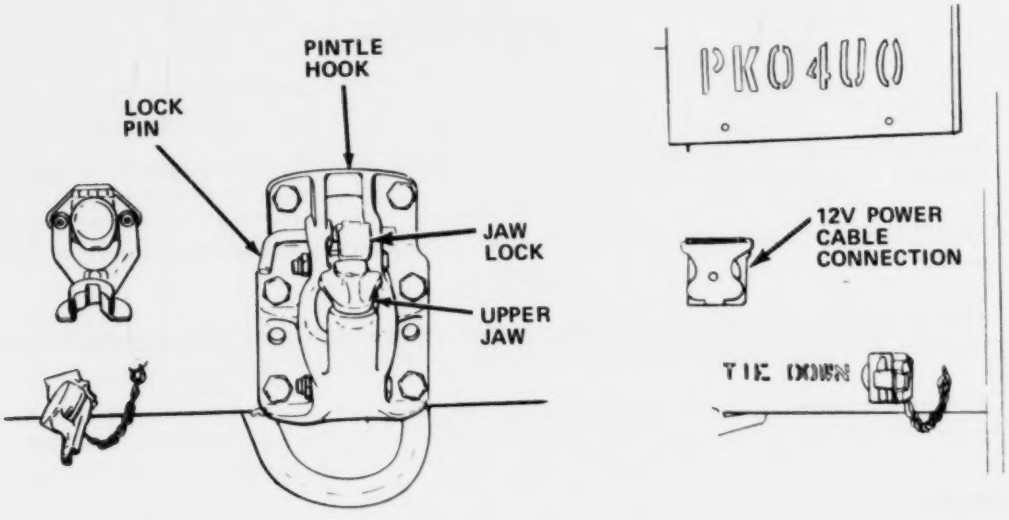
4. Back tractor into position ensuring that fifth wheel fully engages and locks chassis king pin.
5. Raise landing gear to full up position and store crank handle.
6. If tractor has 24 Vdc electrical interconnect power cable, proceed as follows:



- Place voltage control unit bulb quantity selector to 16-12 V bulb position.

- Place stop light bulb quantity selector to position 2.
- Plug tractor interconnect cable into 24 Vdc socket.

7. If 12 Vdc power interconnect cable is used, plug into 12 Vdc socket.
8. Plug in pigtail connection from voltage control box to male 12 Vdc plug.
9. Connect tractor interconnect service (yellow gladhand) and emergency (red gladhand) air lines to mating gladhands on chassis.
10. If auxiliary towed vehicle is to be attached, proceed as follows:

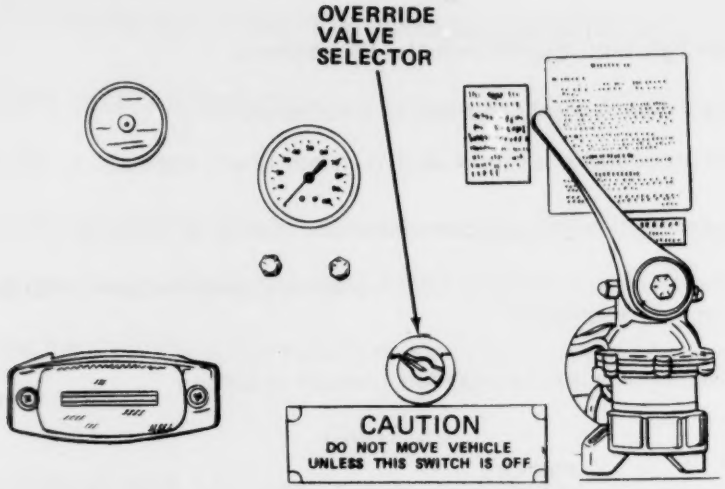


- Pull out on pintle hook spring-loaded lock pin and raise upper jaw.
- Connect towed vehicle to pintle hook and connect safety chains.

WARNING

BE SURE THAT UPPER JAW IS PROPERLY LOCKED TO PREVENT CHASSIS FROM COMING LOOSE DURING TRANSPORT.

- Close upper jaw and be sure it is locked.
- Connect power interconnect cable to chassis receptacle.
- Connect interconnect service (yellow gladhand) and emergency (red gladhand) air lines to mating gladhands on towed vehicle.



11. Be sure that override valve selector is in OFF position allowing air ride bags to lift load to preset height.

12. Test brakes on chassis and towed vehicle (as applicable) by observing brake valve action at all wheels.

13. Test for proper operation of clearance marker, license, tail, stop, turn signal and emergency flasher lights on chassis and towed vehicle (as applicable).

14. Be sure van body-to-chassis corner locks are locked.

2.3.2 PARKING.

1. Park chassis on a firm, fairly level, well drained surface.

2. Move crank handle from stowed position and engage with landing gear gearbox.

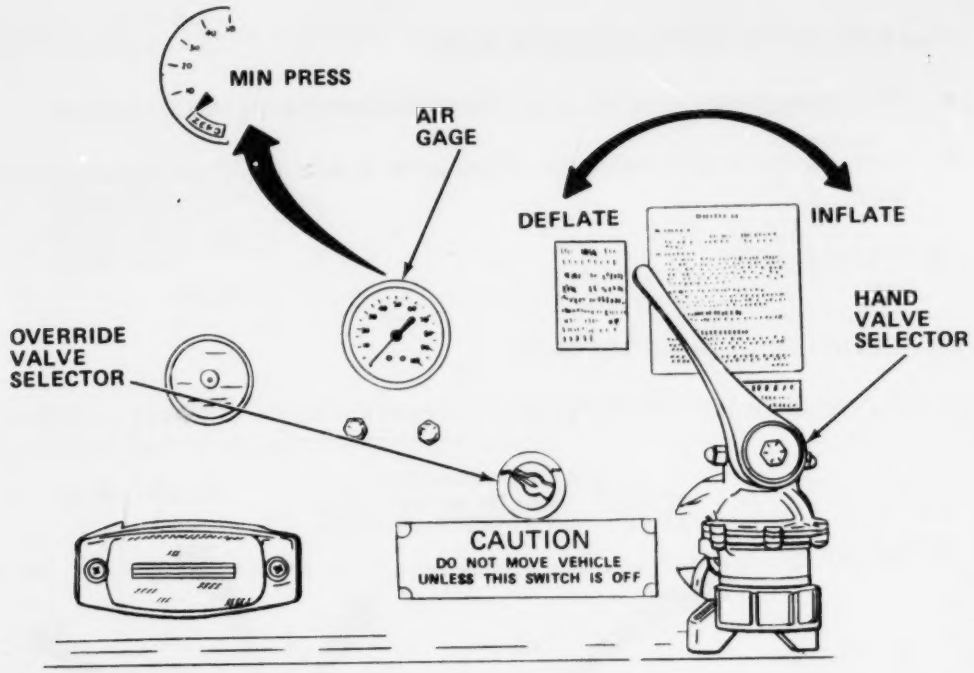
3. Lower landing gear to ground.

4. Disconnect service and emergency interconnect air lines from chassis at gladhands and stow lines.

5. Disconnect tractor's interconnect power lead from chassis voltage control unit receptacle. Stow lead.

6. Unlock fifth wheel to chassis king pin and detach tractor from chassis.

7. Place override valve selector to ON.



CAUTION

TO PREVENT AIR BAG FROM CREASING, DO NOT REDUCE PRESSURE TO LESS THAN 3 PSI.

8. Move override hand valve lever to deflate position and bleed air ride system to 3 psi as seen on system pressure gage.

9. Move override valve selector to OFF.

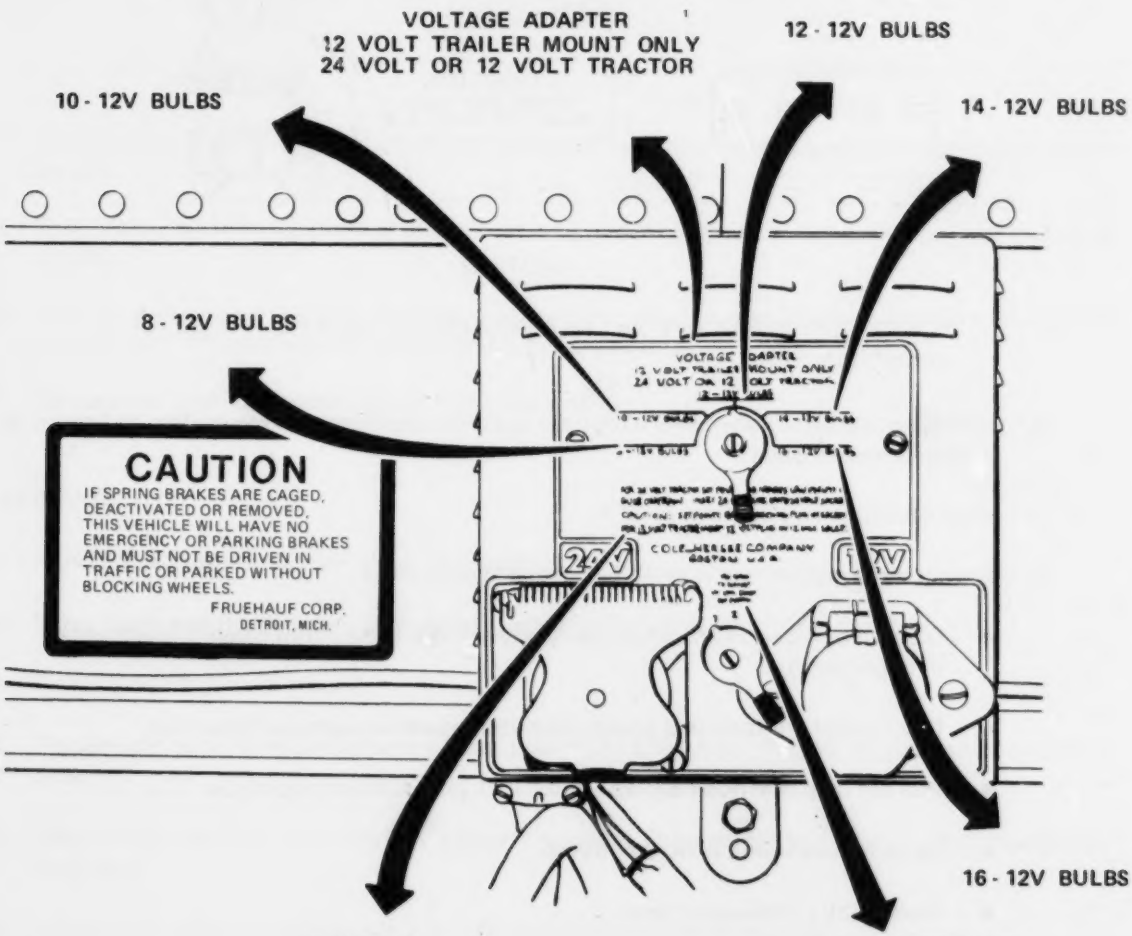
10. If auxiliary towed vehicle is attached, proceed as follows:

    - Disconnect service and emergency interconnect lines from chassis gladhands (if applicable).
    - Disconnect interconnect power lead from power receptacle. Stow lead.
    - Pull out on pintle hook spring-loaded lock pin and raise upper jaw.
    - Detach towed vehicle from chassis.
    - Close pintle hook upper jaw.

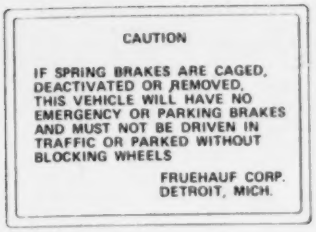
11. If van body requires leveling, proceed as follows:
    - Move crank handle from stowed position and lower leveling jacks to ground.
    - Using van body level indicators, adjust jacks to level load from front to rear and side to side.
12. Stow crank handles.

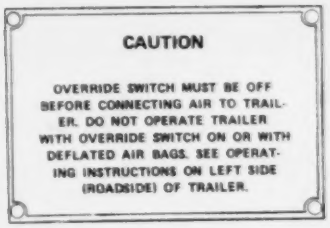
2.3.3 OPERATING INSTRUCTION AND DECALS.

2.3.3.1 VOLTAGE CONTROL UNIT INSTRUCTION PLATE ON FRONT OF VOLTAGE CONTROL UNIT.


VOLTAGE ADAPTER
12 VOLT TRAILER MOUNT ONLY
24 VOLT OR 12 VOLT TRACTOR
12 - 12V BULBS
10 - 12V BULBS
14 - 12V BULBS
8 - 12V BULBS
CAUTION
IF SPRING BRAKES ARE CAGED, DEACTIVATED OR REMOVED, THIS VEHICLE WILL HAVE NO EMERGENCY OR PARKING BRAKES AND MUST NOT BE DRIVEN IN TRAFFIC OR PARKED WITHOUT BLOCKING WHEELS.
FRUEHAUF CORP.
DETROIT, MICH.
16 - 12V BULBS
CAUTION
SET POINTER BEFORE INSERTING PLUG IN SOCKET. FOR 12 VOLT TRACTOR, INSERT 12 VOLT PLUG IN 12 VOLT SOCKET. FOR 24 VOLT TRACTOR, SET POINTER TO NEAREST LOW NUMBER OF BULBS ON TRAILER. INSERT 24 VOLT PLUG INTO 24 VOLT SOCKET.
SET LEVER TO NUMBER OF STOP LAMPS ON TRAILER

2.3.3.2 CAUTION DECALS LEFT AND RIGHT SIDE OF VOLTAGE CONTROL UNIT.


CAUTION
IF SPRING BRAKES ARE CAGED, DEACTIVATED OR REMOVED, THIS VEHICLE WILL HAVE NO EMERGENCY OR PARKING BRAKES AND MUST NOT BE DRIVEN IN TRAFFIC OR PARKED WITHOUT BLOCKING WHEELS
FRUEHAUF CORP.
DETROIT, MICH.


CAUTION
OVERRIDE SWITCH MUST BE OFF BEFORE CONNECTING AIR TO TRAILER. DO NOT OPERATE TRAILER WITH OVERRIDE SWITCH ON OR WITH DEFLATED AIR BAGS. SEE OPERATING INSTRUCTIONS ON LEFT SIDE (ROADSIDE) OF TRAILER.

2.3.3.3 OVERRIDE SELECTOR SWITCH CAUTION PLATE.

NOTE

Either of these caution plates may be used with this switch.

2.3.3.4 HAND VALVE DECAL.

OPERATING INSTRUCTIONS

Neway Air Suspension with Manual Control

1. EMPTY OPERATION

   To deflate air springs, turn handle to exhaust position. CAUTION: Do not operate unit without minimum air pressure to be approximately 3 PSI.

2. LOADED OPERATION

   To inflate air springs, move handle to inflate position until desired pressure is obtained. (Approximately 65 PSI for a 16000 lb. load at dead axle.) Hand valve will maintain set pressure for desired axle load distribution, calibrate air gage by scaling axle weights and checking air pressure. CAUTION: Do not operate loaded vehicle without proper amount of air pressure.

3. TRACTION CONTROL OPERATION (TRACTORS & TRUCKS)

   Move handle to lower pressure position until desired traction is obtained. By reducing air pressure at dead axle, load will be transfered to drive axle. CAUTION: Do not overload drive axle.

4. COUPLING TO LOADED TRAILER (TRACTOR)

   Inflate air springs to a higher pressure but maintain proper traction.

ADJUSTING INSTRUCTIONS

MINIMUM PRESSURE SETTING ADJUSTMENTS - Set hand valve to minimum desired pressure, then tighten upper acorn nut securely. Minimum pressure not to be less than 3 PSI.

MAXIMUM PRESSURE SETTING ADJUSTMENT - Set hand valve to maximum desired pressure, then tighten lower acorn nut securely.

90044021 3/7/75

AC-77-M AND AC-77-S
OPERATING INSTRUCTIONS

NORMAL HIGHWAY OPERATION

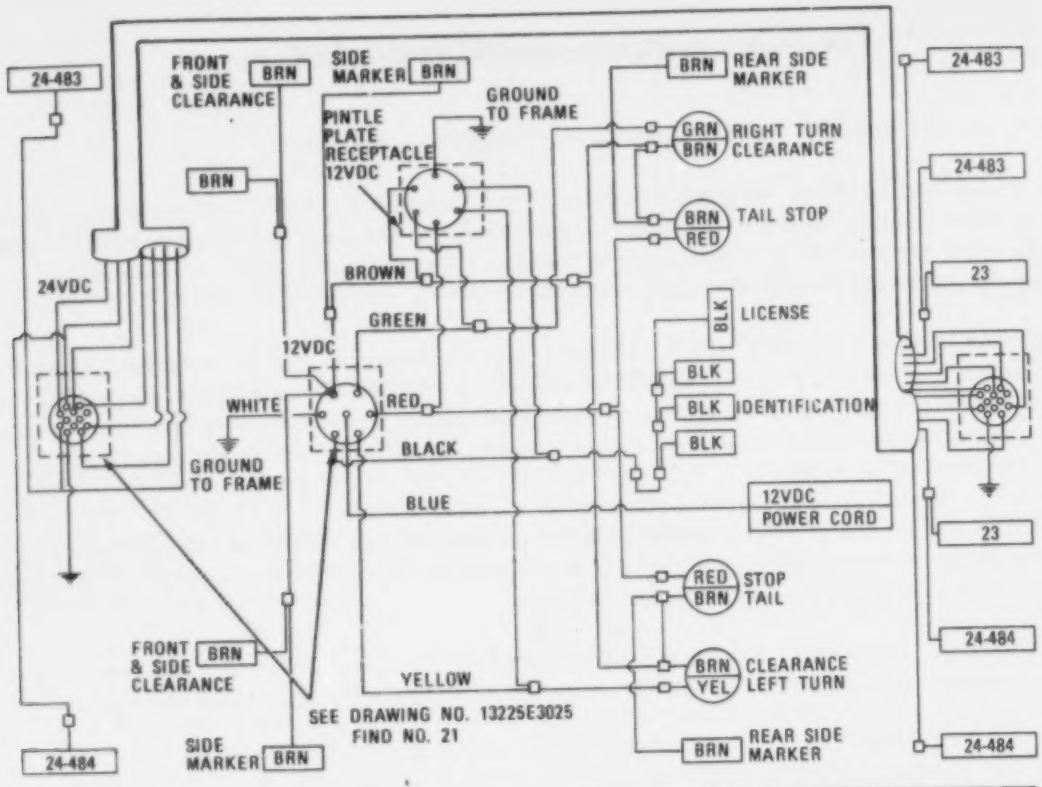
When vehicle is in motion, switch must be in "off" position for normal height control valve automatic operation.

RAISING AND LOWERING

To raise or lower vehicle, place switch in "on" position and regulate the height of the vehicle with the hand valve.

90044206

2.3.3.5 ELECTRICAL SCHEMATIC.



24 V ELECTRIC SCHEMATIC

TERMINAL DESIGNATION	CIRCUIT NO.	CONNECTS TO
A	24-484	LH BLACKOUT MARKER
B	22-481	LH SERVICE SIGNAL
C	24-283	RH BLACKOUT MARKER
D	90	GROUND
E	21-489	SERVICE CLEARANCE
F	23	BLACKOUT STOP
J	22-480	RH SERVICE SIGNAL
K	37	12VDC POWER CORD

2.3.3.6 JACKING INSTRUCTIONS.

JACKING INSTRUCTIONS FOR CHANGING TIRES

1. LOCATE TIRE TO BE CHANGED OVER LEVEL OR LOW SURFACE AREA
2. USE LEVELING JACKS TO CLEAR TIRE ABOVE SURFACE.

Section IV. OPERATION UNDER UNUSUAL CONDITIONS

2.4. OPERATION PROCEDURES.

2.4.1 OPERATION IN COLD WEATHER. Extremely cold weather creates hardening of air lines and electrical leads. Caution should be taken not to distrub any lines or leads to prevent permanent damage. Air tanks must be drained of moisture at increased intervals. Lubrication intervals must also be increased. Tire pressure should be frequently checked.

2.4.2 OPERATION IN EXTREME HEAT. Extreme heat can create excessive tire pressures and wear. Tire conditions and pressures should be checked at increased intervals. Lubricants tend to thin out and dry out sooner creating undue wear of moving parts. Lubrication ihtervals must be increased. Sustained high temperatures can accelerate deterioration of pneumatic systems' seals, requiring closer attention to leaks and erratic operation.

2.4.3 OPERATION IN DUSTY AND SANDY AREAS. Dust, dirt and sand are abrasives which accelerate deterioration of moving parts. Frequent cleaning and hosing should be accomplished. Increased lubrication frequencies are a must to preclude failures.

2.4.4 FORDING. No special procedures are required before fording. Caution must be taken when applying brakes during and after fording. Wet brake lining can prevent normal brake response.

CHAPTER 3

OPERATOR MAINTENANCE INSTRUCTIONS

Section I. LUBRICATION INSTRUCTIONS

3.1. GENERAL.

3.1.1 LUBRICATION INSTRUCTIONS. Lubrication instructions are covered in LO 5-2330-305-12.

Section II. TROUBLESHOOTING

3.2.1 INTRODUCTION. There are no specific troubleshooting procedures to be followed by chassis operating personnel. While the chassis is being operated on the road or when parked, the operator should constantly observe the various portions and assemblies of the chassis for erratic operation or possible malfunctions. Erratic operation or apparent malfunctions should be reported to the appropriate maintenance personnel as they occur.

CAUTION

IF ANY OPERATING CONTROLS APPEAR "SLUGGISH" OR DIFFICULT TO MANIPULATE DURING NORMAL OPERATION, DO NOT ATTEMPT TO FORCE THEM TO OPERATE. STOP OPERATION AND NOTIFY MAINTENANCE PERSONNEL.

Section III. MAINTENANCE PROCEDURES.

3.3.1 There are no maintenance procedures performed at the operator level.

CHAPTER 4

ORGANIZATIONAL MAINTENANCE INSTRUCTIONS

Section I. REPAIR PARTS, SPECIAL TOOLS AND EQUIPMENT

4.1 GENERAL.

4.1.1 COMMON TOOLS AND EQUIPMENT. For authorized common tools and equipment, refer to the Modified Table of Organization and Equipment (MTOE) applicable to your unit.

4.1.2 SPECIAL TOOLS; TEST, MEASUREMENT AND DIAGNOSTIC EQUIPMENT; AND SUPPORT EQUIPMENT. Except for the hub wrench, no special tools; test, measurement, and diagnostic equipment; or support equipment are required for the repair of this equipment at the Organizational level of maintenance.

4.1.3 REPAIR PARTS. Repair parts for this equipment are listed in the Repair Parts and Special Tools List (RPSTL), TM 5-2330-305-24P, covering Organizational and Direct/General Support Maintenance.

Section II. ORGANIZATIONAL PREVENTIVE MAINTENANCE CHECKS AND SERVICES

4.2. PMCS PROCEDURES.

4.2.1 INTRODUCTION.

a. Always keep in mind the WARNINGS and CAUTIONS when performing PMCS. Table 4-1 lists the PMCS procedures to be performed by Organizational maintenance. Be sure to perform the PMCS at the frequency indicated by the INTERVAL codes in the table.

b. If your equipment fails to operate, troubleshoot with the proper equipment. Report any deficiencies in accordance with DA PAM 738-750.

NOTE

If the equipment must be kept in continuous operation, check and service only those items that can be checked and serviced without disturbing operation. Make the complete checks and services when the equipment can be shut down.

c. The numbers found in the ITEM NUMBER column shall be used as a source of item numbers for the TM NUMBER column on DA Form 2404, Equipment Inspection and Maintenance Worksheet, in recording the results of PMCS.

d. List of tools and materials required for PMCS is as follows:

Item	Quantity
Socket (1 1/2 in.)	1 ea
Torque Wrench	1 ea

Table 4-1. ORGANIZATIONAL PREVENTIVE MAINTENANCE CHECKS AND SERVICES

B - Before, D - During, A - After | W - Weekly, M - Monthly, Q - Quarterly | AN - Annually, S - Semiannually, BI - Biannually | (Number) - Hundreds of Hours

ITEM NO.	INTERVAL	ITEM TO BE INSPECTED PROCEDURE
1	M	INSPECT LEVELING JACK. Inspect jack for structural damage and proper operation. Ensure legs will extend and retract the full extent of their travel with no binding noted.
2	M	INSPECT AXLE ASSEMBLY. Inspect axle assembly for structural damage, cracks in welds, excessive wear and proper operation of brakes.
3	M	INSPECT AIR RIDE ASSEMBLY. Check for loose or missing bolts, nuts, etc.
4	M	INSPECT HITCH.

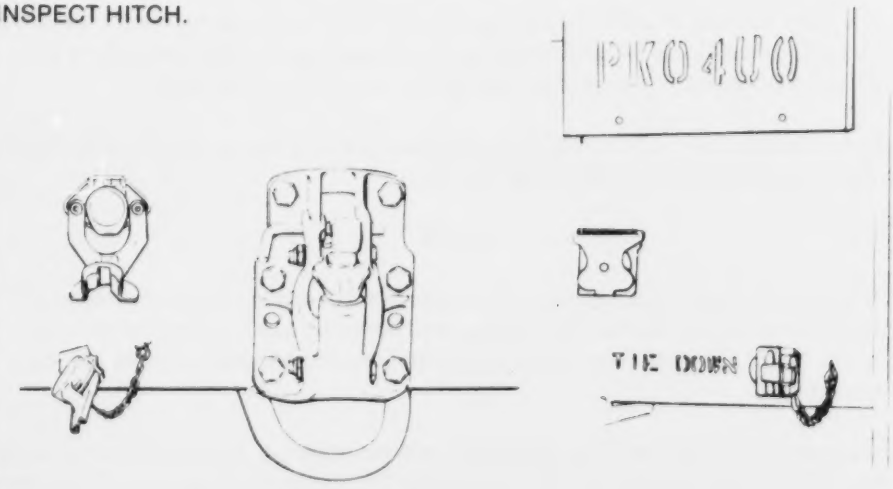


Table 4-1. ORGANIZATIONAL PREVENTIVE MAINTENANCE CHECKS AND SERVICES (Cont)

B - Before
D - During
A - After

W - Weekly
M - Monthly
Q - Quarterly

AN - Annually
S - Semiannually
BI - Biannually

(Number) - Hundreds of Hours

ITEM NO.	INTERVAL	ITEM TO BE INSPECTED PROCEDURE
		1. Check for loose bolts or nuts. Tighten if necessary.
		2. Check shutoff valve for proper operation.
		3. Check backslap chamber for proper operation.

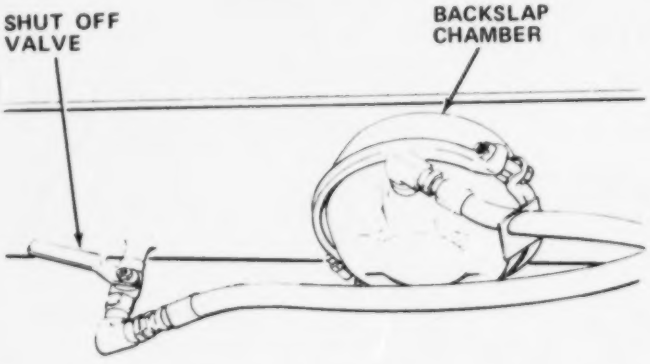
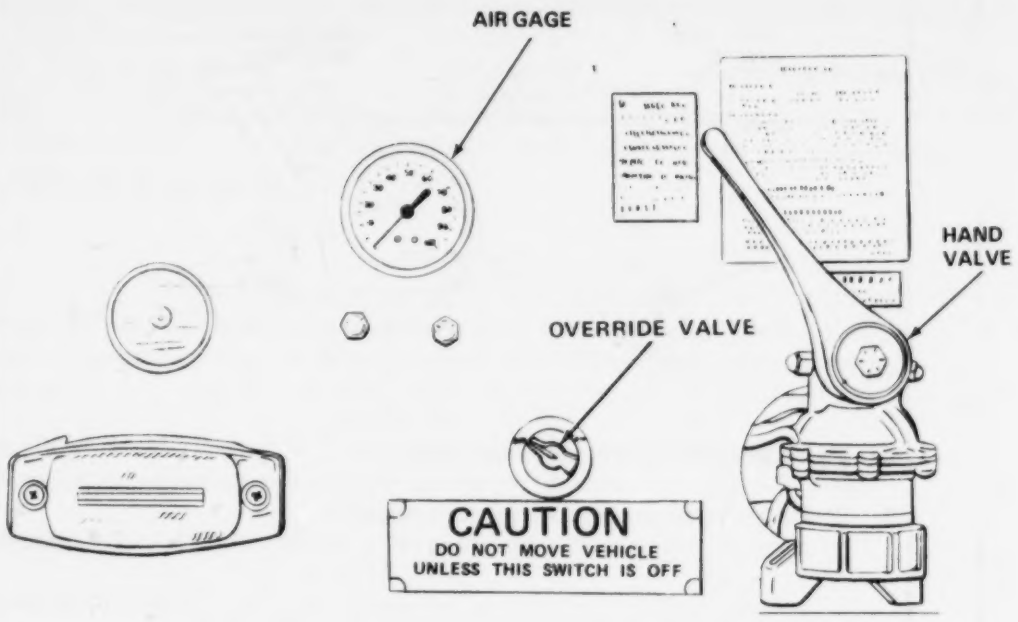


Table 4-1. ORGANIZATIONAL PREVENTIVE MAINTENANCE CHECKS AND SERVICES (Cont)

B - Before	W - Weekly	AN - Annually	(Number) - Hundreds of Hours
D - During	M - Monthly	S - Semiannually	
A - After	Q - Quarterly	BI - Biannually	

ITEM NO.	IN-TER-VAL	ITEM TO BE INSPECTED PROCEDURE
5	M	INSPECT OVERRIDE ASSEMBLY.



1. Inspect override assembly for loose or missing nuts, bolts or fittings.
2. Check hand and manual valves for proper operation. Replace if defective.
3. Check gage for broken or missing lens. Replace gage if defective.

Table 4-1. ORGANIZATIONAL PREVENTIVE MAINTENANCE CHECKS AND SERVICES (Cont)

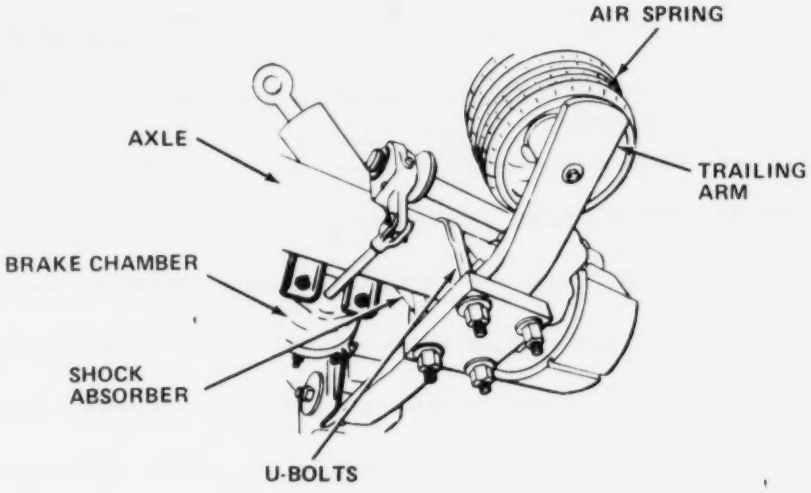
B - Before
D - During
A - After

W - Weekly
M - Monthly
Q - Quarterly

AN - Annually
S - Semiannually
BI - Biannually

(Number) - Hundreds of Hours

ITEM NO.	INTERVAL	ITEM TO BE INSPECTED PROCEDURE
6	Q	INSPECT U-BOLTS.



1. Inspect U-bolts for rust and wear.
2. Alternately retorque U-bolt nuts until 700-750 ft lbs (96.6-103.5 m.kg) is achieved.

Section III. ORGANIZATIONAL TROUBLESHOOTING

4.3. INTRODUCTION.

4.3.1 INTRODUCTION.

a. Organizational troubleshooting procedures cover the most common malfunctions that may be repaired at the Organizational level. Repair or adjustment requiring specialized equipment is not authorized unless such equipment is available. Troubleshooting procedures used by the operator should be conducted in addition to the Organizational Troubleshooting procedures.

b. This manual cannot list all the possible malfunctions or every possible test/inspection and corrective action. If a malfunction is not listed or corrected by a listed corrective action, notify your supervisor.

Table 4-2. ORGANIZATIONAL TROUBLESHOOTING

MALFUNCTION TEST OR INSPECTION/PROBABLE CAUSE CORRECTIVE ACTION
1. BRAKES WILL NOT RELEASE.
Step 1. Check to see if brake shoes are bound up at anchor pins.
Lubricate brake operating parts.
Step 2. Check to see if brake hoses are restricted.
Replace brake hoses as applicable (4.4.1.25).
Step 3. Check to see if brakes are out of adjustment.
Adjust brakes as necessary (4.4.1.23).
Step 4. Check for proper brake line coupling between tractor and chassis.
Reconnect as required.
2. NO BRAKES OR INSUFFICIENT BRAKES.
Step 1. Check to see if the service air line is shut off at the tractor.
Open cutout cocks at rear of tractor cab or push control valve in.
Step 2. Check to see if brake lines between tractor and chassis are properly coupled.
Properly couple brake lines between tractor and chassis.

Table 4-2. ORGANIZATIONAL TROUBLESHOOTING (Cont)

MALFUNCTION
TEST OR INSPECTION/PROBABLE CAUSE
CORRECTIVE ACTION

3. WOBBLY TIRES.

Step 1. Check to see if tire wobble is due to uneven rim clamping.

Torque/tighten all rim clamps (4.4.1.21).

Step 2. Check to see if any of the wheels or rims are bent.

Replace bent wheel or rim (4.4.1.21).

4. LOSS OF TIRE AIR PRESSURE.

Step 1. Check to see if the tire has been punctured.

Replace or repair punctured tire.

Step 2. Check to see if the tire has a faulty valve or valve core.

Replace valve assembly or core.

Step 3. Check to see if wheel or rim have been damaged.

Replace damaged wheel or rim (4.4.1.21).

5. EXCESSIVE OR UNEVEN TIRE WEAR.

Step 1. Check tire pressure to see if it is overinflated or underinflated.

Inflate the tire to the proper pressure of 85 psi (5.98 kg/cm^2).

Step 2. Check to see if there are loose wheel stud nuts or clamps.

Tighten wheel stud nuts or clamps.

Step 3. Check to see if there are loose or tight wheel bearing adjustments.

Adjust bearings as applicable (refer to Direct/General Support Maintenance).

Step 4. Check to see if the tires are properly matched.

Match the tires.

Table 4-2. ORGANIZATIONAL TROUBLESHOOTING (Cont)

MALFUNCTION
TEST OR INSPECTION/PROBABLE CAUSE
CORRECTIVE ACTION

5. EXCESSIVE USE OR UNEVEN TIRE WEAR (Cont.)

Step 5. Check to see if the chassis has been driven in a manner which included rapid stopping.

When approaching a stop, apply the brakes slowly.

Step 6. Check to see if the chassis has been driven in a manner which included high speed driving on turns.

Reduce speed when traveling on turns.

6. SCUFFED TIRES.

Step 1. Check the tire pressure to see if it is overinflated or underinflated.

Inflate the tire to the proper pressure of 85 psi (5.98 kg/cm^2).

Step 2. Check to see if the chassis has been driven in a manner which included excessive speed on turns.

Reduce speed when traveling on turns.

7. GRABBING BRAKES.

Step 1. Check to see if brakes are out of adjustment.

Adjust brakes as necessary (4.4.1.23).

Step 2. Check to see if there is a damaged brake chamber or internal assembly.

Notify Direct/General Support Maintenance personnel of trouble.

Step 3. Check to see if there is a leaky or broken hose between the relay valve and the brake chamber.

Repair or replace the defective hose as applicable.

Table 4-2. ORGANIZATIONAL TROUBLESHOOTING (Cont)

MALFUNCTION
TEST OR INSPECTION/PROBABLE CAUSE
CORRECTIVE ACTION

8. BRAKES DRAGGING.

Step 1. Check to see if brakes are out of adjustment.

Adjust brakes as necessary (4.4.1.23).

Step 2. Check to see if there is a binding cam, anchor pins or chamber rod end pin.

Lubricate as necessary and free up binding parts.

9. SLOW BRAKE APPLICATION OR RELEASE.

Step 1. Check to see if the brake operating parts are adequately lubricated.

Lubricate the operating parts of the brake.

Step 2. Check to see if there is any restriction in the brake hoses or lines.

Repair or replace defective hoses or lines as applicable (4.4.1.25).

Step 3. Check to see if brakes are out of adjustment.

Adjust brakes as necessary (4.4.1.23).

10. ALL AIR SPRING FLAT.

NOTE

- A malfunction of the air suspension system will not necessarily be a cause for highway stoppage. Careful operation of chassis will permit limited continued operation.
- Rubber bumpers within each air spring are provided to carry the load in the event of an air spring malfunction where deflation occurs.

Step 1. Check to see if the air supply is sufficient and check couplings and valve controls from the tractor to the chassis for leakage.

Build up and maintain the tractor air pressure to at least 85 psi (5.98 kg/cm^2). Repair or replace any defective couplings and valve controls as necessary (4.4.1.25).

Table 4-2. ORGANIZATIONAL TROUBLESHOOTING (Cont)

MALFUNCTION
TEST OR INSPECTION/PROBABLE CAUSE
CORRECTIVE ACTION

10. ALL AIR SPRING FLAT (Cont.)

Step 2. Inspect and test to see if there is a leak or broken air line in the chassis or air suspension system.

Locate the leak and/or broken air line and repair/replace as applicable (4.4.1.25).

Step 3. Check to see if height control valve is leaking.

Replace height control valve (4.4.1.24).

11. SUSPENSION DEFLATES RAPIDLY WHEN PARKED.

Check to see if there is a leak in the air system.

Locate and repair the leak(s) in the air system.

12. AIR SPRINGS WORN EXCESSIVELY.

Step 1. Check to see if the worn air spring is contacting or rubbing the frame, tires or rims. If there is contact or rubbing, check for proper tire sizes, clearances and inflation.

Replace tires that are incorrect size. Inflate tires to the correct pressure of 85 psi (5.98 kg/cm^2) and remove any obstacle that may prevent the tire from having the proper clearance.

Step 2. Check to see if the air springs are being operated without air pressure in the spring.

Refer to the corrective action for Malfunction 10.

Step 3. Check to see if the air suspension system is being operated before allowing adequate time for the pressure to build up.

Refer to the corrective action for Malfunction 10.

13. RATIO RELAY VALVE OR RELAY VALVE OR QUICK RELEASE VALVE LEAKING AIR.

Replace defective valve.

Section IV. ORGANIZATIONAL MAINTENANCE PROCEDURES

4.4. MAINTENANCE PROCEDURES.

4.4.1 GENERAL. This section contains the step-by-step procedures for performing Organizational maintenance for the Chassis, Semi-trailer. Personnel required are listed only if the task requires more than one. If personnel are not listed, it means one person can do the task.

INDEX

PROCEDURES	PARAGRAPH
Replace Leveling Jack Assembly	4.4.1.1
Replace Landing Gear Assembly	4.4.1.2
Replace Voltage Control Unit	4.4.1.3
Repair License Plate Light Assembly	4.4.1.4
Repair Clearance, Marker, ID Light Assembly	4.4.1.5
Repair Blackout Stoplight Assembly	4.4.1.6
Replace Blackout Marker Light Assembly	4.4.1.7
Replace Stoplights, Turn Signals, and Tail Light Assembly	4.4.1.8
Replace Reflector	4.4.1.9
Replace Ratio Relay Valve	4.4.1.10
Replace Quick Release Valve	4.4.1.11
Replace Auxiliary Service Relay Valve	4.4.1.12
Replace Brake Chamber	4.4.1.13
Replace Override Valve Selector	4.4.1.14
Replace Pilot Valve	4.4.1.15
Replace Hand Lever Valve	4.4.1.16
Replace Gage	4.4.1.17
Replace Backslap Chamber	4.4.1.18
Replace Gladhands and Shutoff Valves	4.4.1.19

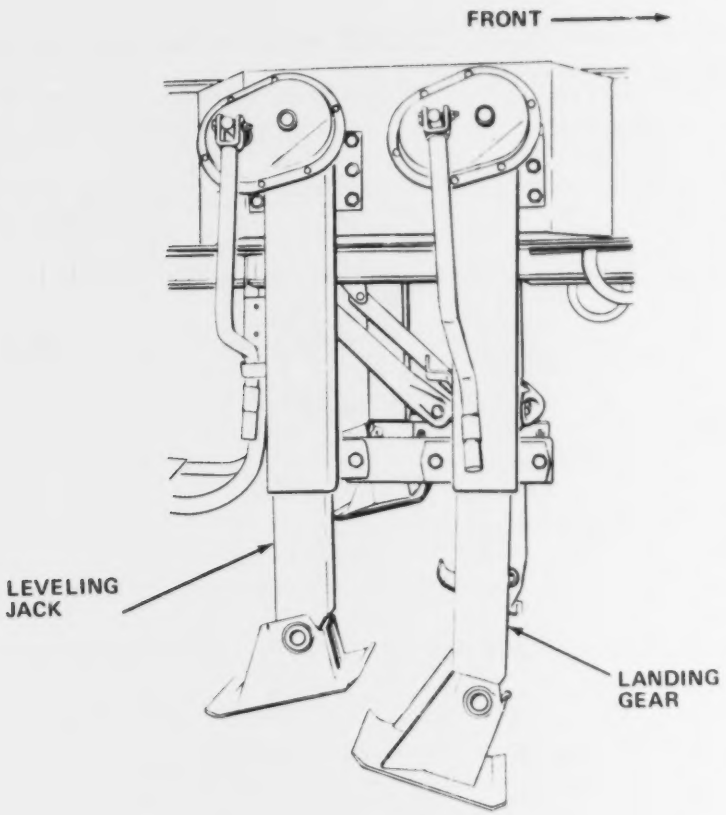
INDEX (Cont.)

PROCEDURES	PARAGRAPH
Replace Air Spring	4.4.1.20
Replace Wheel and Tire	4.4.1.21
Replace Hubodometer	4.4.1.22
Initial Brake Adjustment	4.4.1.23
Replace Height Control Valve	4.4.1.24
Replace Air Hoses	4.4.1.25
Replace Shock Absorber	4.4.1.26
Replace Equalizer and Bushing	4.4.1.27
Replace U-Bolts	4.4.1.28
Replace Moisture Ejector	4.4.1.29

4.4.1.1 REPLACE LEVELING JACK.

TOOLS: Tool Kit

SUPPLIES: Leveling Jack



WARNING

SUPPORT LEVELING JACKS BEFORE ATTEMPTING TO REMOVE THEM. FAILURE TO DO SO COULD RESULT IN PERSONNEL INJURY.

1. Remove bolts and nuts which secure leveling jack to braces.
2. Remove bolts which secure leveling jack to chassis and remove jack.
3. Install new jack in position and secure to chassis with bolts.
4. Install bolts and nuts which secure jack to braces.

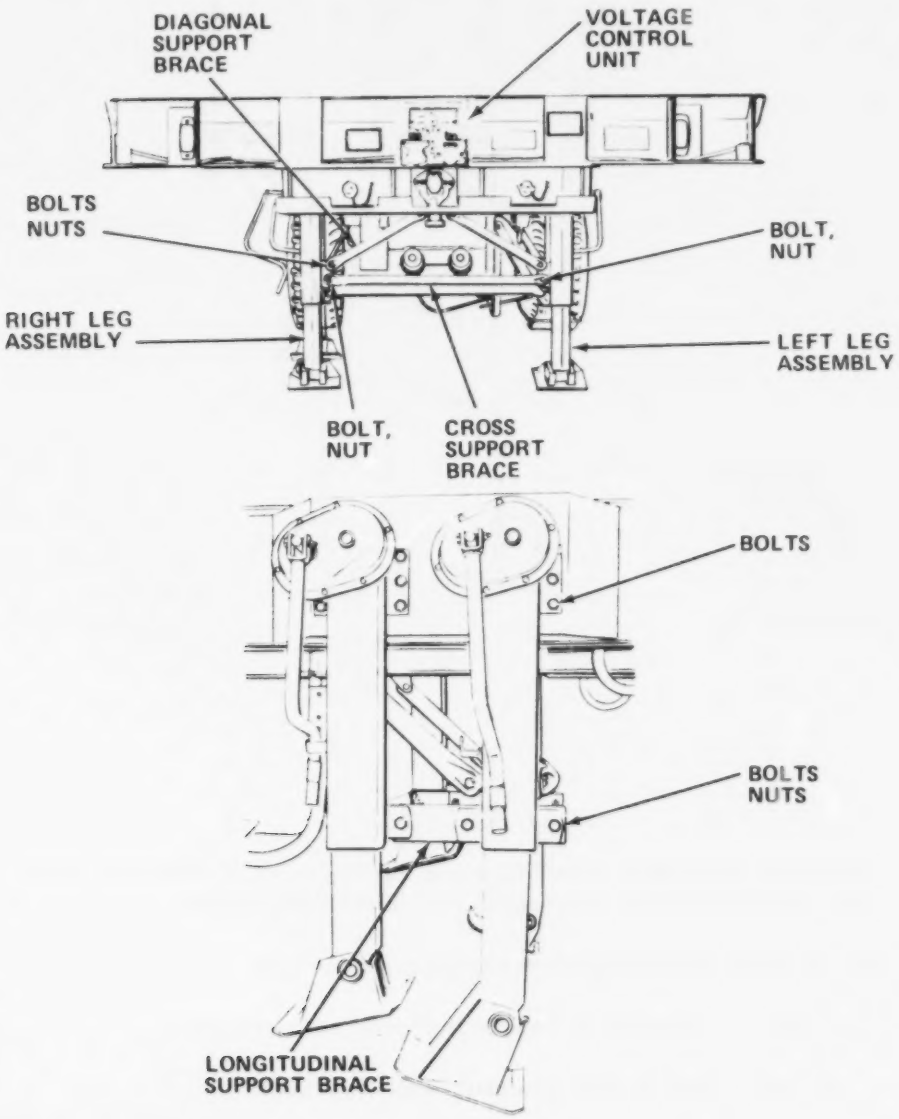
4.4.1.2 REPLACE LANDING GEAR ASSEMBLY.

TOOLS: Tool Kit

SUPPLIES: Landing Gear Assembly

1. Extend front chassis leveling jacks to maximum height.

2. With front leveling jacks supporting chassis, retract landing gear. This will ensure enough clearance to allow removal of the landing gear.



3. Remove nuts, bolts, and cross support brace.
4. Remove nuts and bolts which secure diagonal support braces to landing gear.
5. Remove nuts and bolts which secure horizontal support braces to leg assemblies.

WARNING

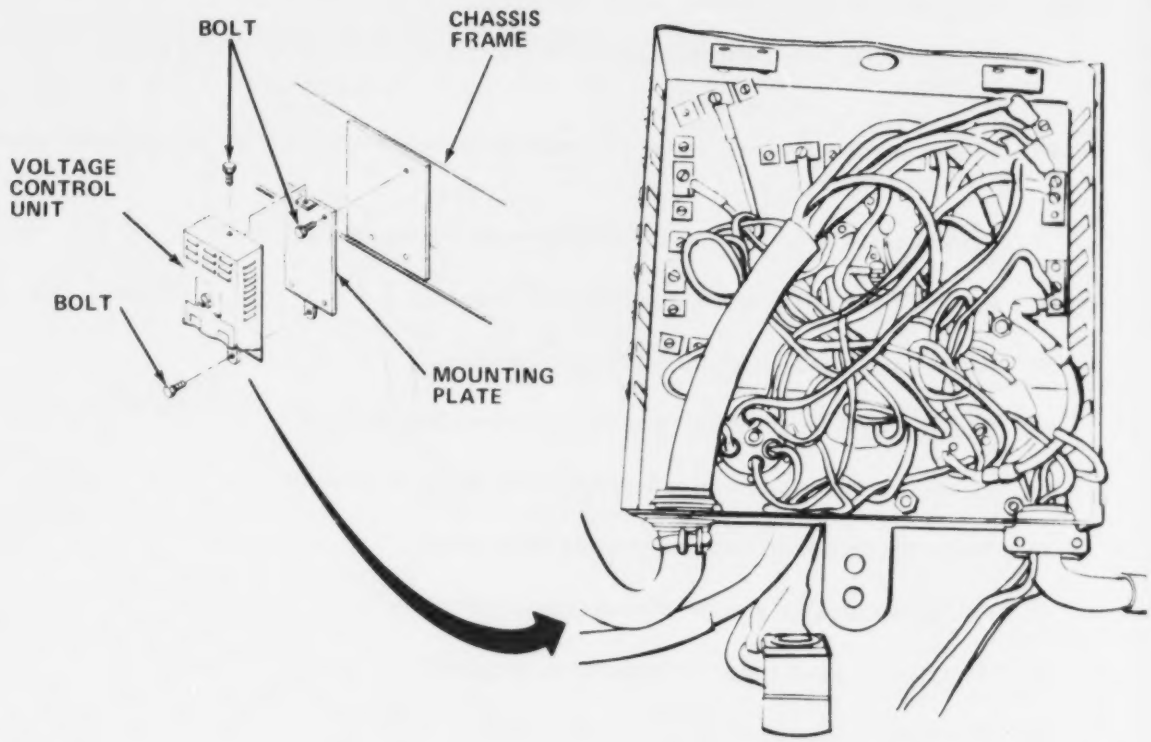
SUPPORT THE LANDING GEAR PROPERLY TO PREVENT IT FROM FALLING.

6. Extend landing gear just enough to support its own weight so it will not fall when mounting bolts are removed.
7. Remove bolts which connect the cross shaft to leg assemblies.
8. Remove bolts and right leg assembly from chassis.
9. Remove bolts and left leg assembly from chassis.
10. Place new left leg assembly in position and secure to chassis.
11. Place new right leg assembly in position and secure to chassis.
12. Reinstall cross-shaft and secure to leg assemblies.
13. Reinstall horizontal support braces to leg assemblies.
14. Reinstall diagonal support braces to landing gear.
15. Reinstall cross support brace to landing gear.

4.4.1.3 REPLACE VOLTAGE CONTROL UNIT.

TOOLS: Flat-Tip Screwdriver(1/4 in.)
Adjustable Wrench (6 in.)

SUPPLIES: Voltage Control Unit

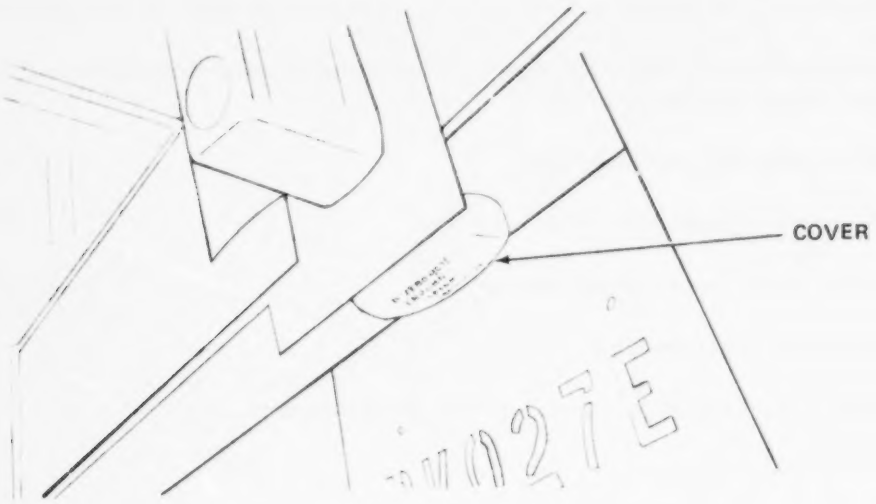


1. Remove bolts which secure the voltage control unit to its mounting plate.
2. Tag and disconnect wires.
3. Remove the bolts which secure the mounting plate to the chassis and remove the mounting plate.
4. Install the new mounting plate on the chassis and secure with bolts.
5. Reinstall wires as tagged, remove tags.
6. Install the new voltage control unit on the mounting plate and secure with bolts.

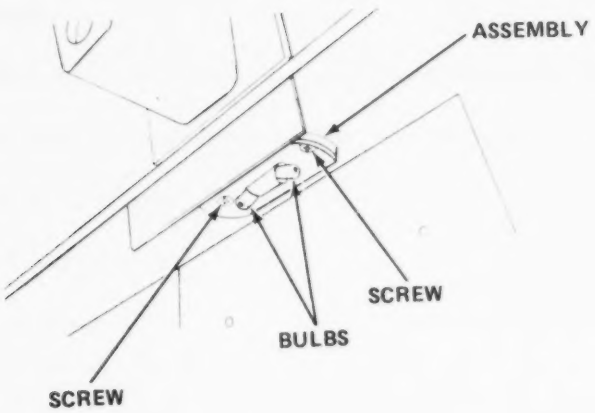
4.4.1.4 REPAIR LICENSE PLATE LIGHT ASSEMBLY.

TOOLS: Flat-Tip Screwdriver

SUPPLIES: Light Assembly
Cover
Bulb



1. Remove cover by pulling off.



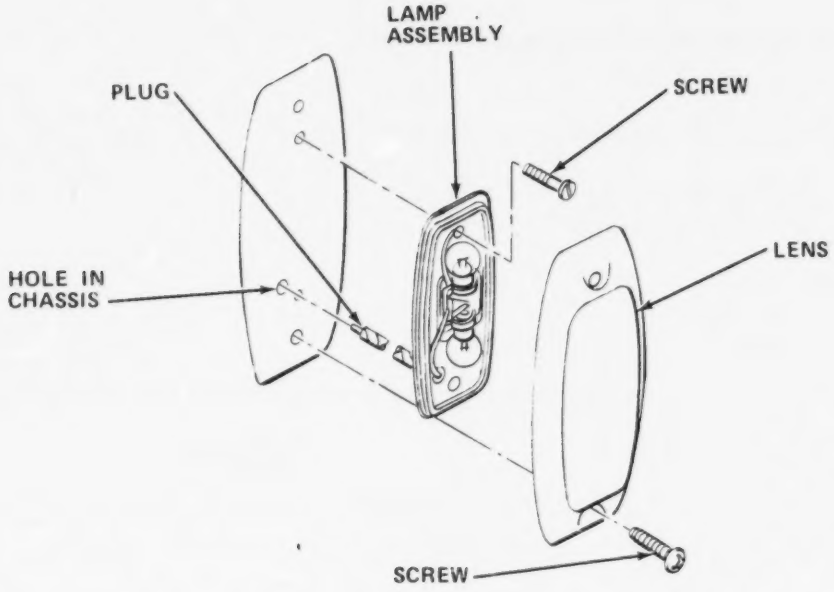
2. Pull bulbs from assembly and visually inspect for broken filament or other damage. Replace if necessary.

3. Remove screws.
4. Remove sealing compound where wire goes through chassis.
5. Unwrap tape and locate connection.
6. Disconnect wire.
7. Remove light assembly and inspect for signs of damage. Replace if necessary.
8. Clip plug from damaged light assembly and splice to replacement light, or if necessary attach new plug to replacement light.
9. Wrap splice with electrical tape.
10. Place wire through hole and connect wire.
11. Wrap connection with electrical tape.
12. Install sealing compound.
13. Install light assembly to chassis and secure with screws.
14. Install bulbs.
15. Perform operational check.
16. Install cover.

4.4.1.5 REPAIR CLEARANCE, MARKER, AND IDENTIFICATION LIGHTS.

TOOLS: Flat-Tip Screwdriver

SUPPLIES: Lens
Lamp Assembly
Bulbs



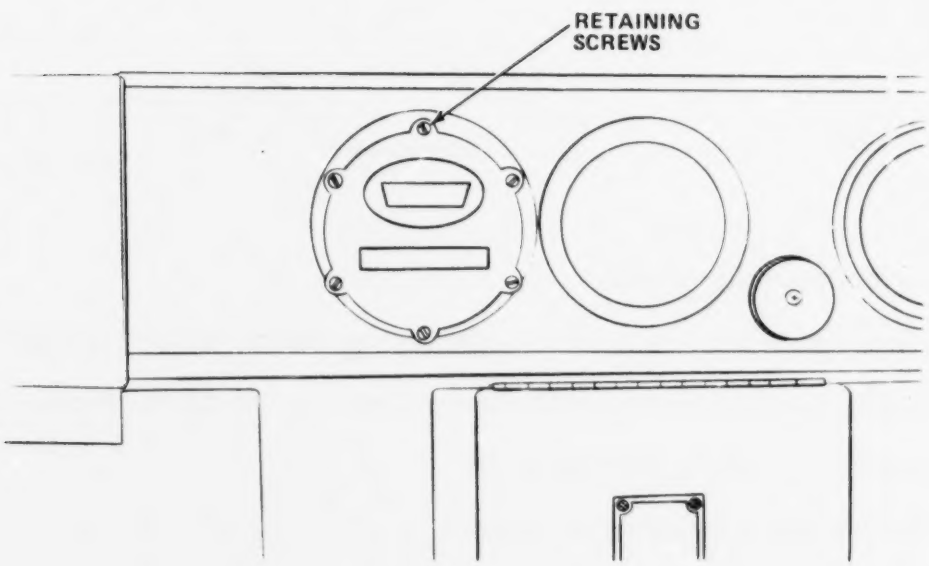
1. Remove lens retaining screws.
2. Remove lens and inspect for cracks or other signs of damage. Replace if necessary.
3. Remove bulbs and visually inspect for broken filament or other damage. Replace if necessary.
4. Remove lamp assembly retaining screws.
5. Carefully move assembly to expose wire.
6. Unwrap tape and locate connection.
7. Disconnect plug.
8. Remove lamp assembly and inspect for damage. Replace if necessary.
9. Push plug through hole in chassis.

10. Connect plug.
11. Wrap with electrical tape.
12. Install lamp assembly and secure with screws.
13. Install bulbs.
14. Perform operational check.
15. Install lens and secure with screws.

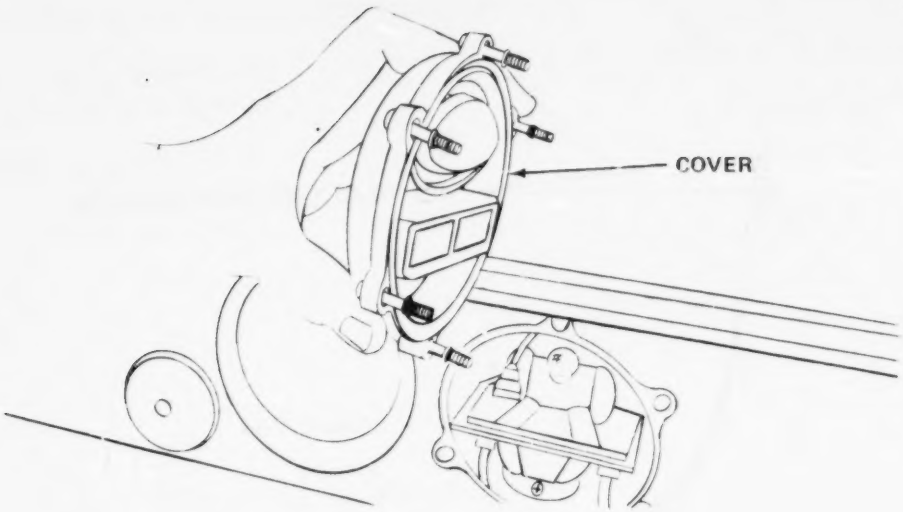
4.4.1.6 REPAIR BLACKOUT STOPLIGHT ASSEMBLY.

TOOLS: Flat-Tip Screwdriver
Cross-Tip Screwdriver

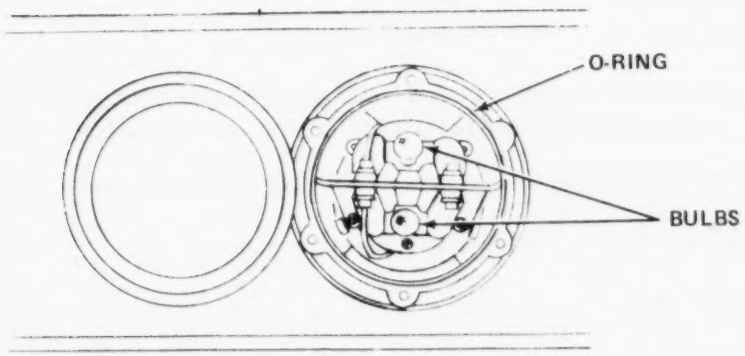
SUPPLIES: Cover
O-ring
Bulb



1. Loosen, but do not remove, retaining screw.

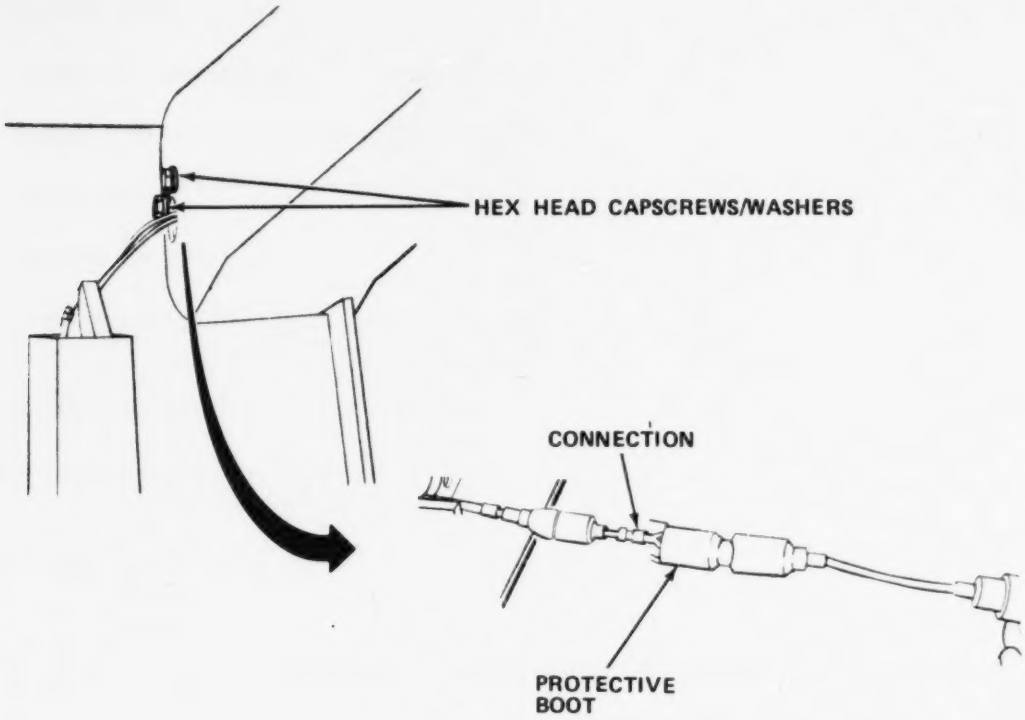


2. Remove cover and inspect for damage. Replace if necessary.



3. Inspect O-ring for excessive wear or breakage. Replace if necessary.

4. Remove bulbs and visually check for broken filament or other damage. Replace bulb if necessary.

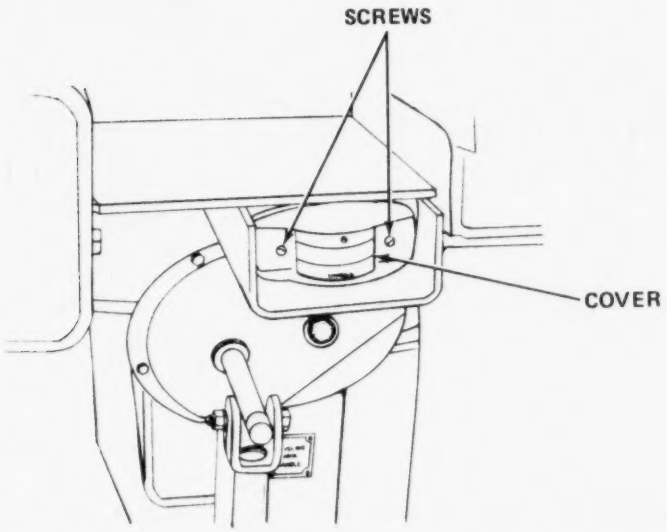


5. Carefully slide protector boot from connection and disconnect wire.
6. Remove hex head capscrews and washers.
7. Remove blackout light assembly from chassis and inspect for broken wires or other signs of damage. Replace assembly if necessary.
8. Install blackout light assembly and secure with hex head capscrews and washers.
9. Connect wires and slide protective boot over connection.
10. Install bulbs.
11. Perform operational check.
12. Install blackout light cover and secure with screws.

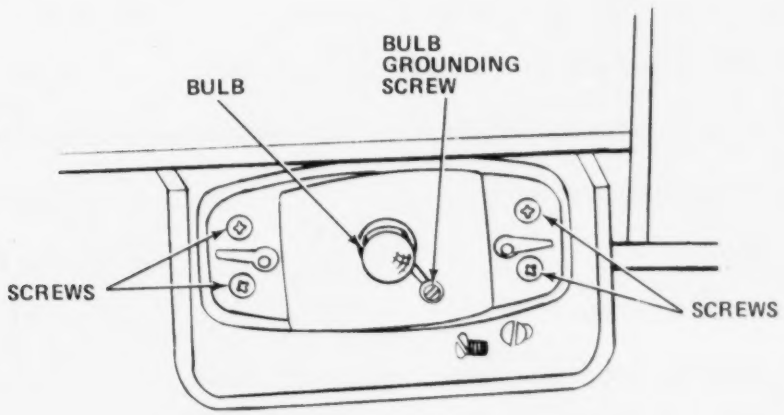
4.4.1.7 REPLACE BLACKOUT MARKER LIGHT ASSEMBLY.

TOOLS: Flat-Tip Screwdriver
Cross-Tip Screwdriver

SUPPLIES: Cover
Bulb
Light Assembly



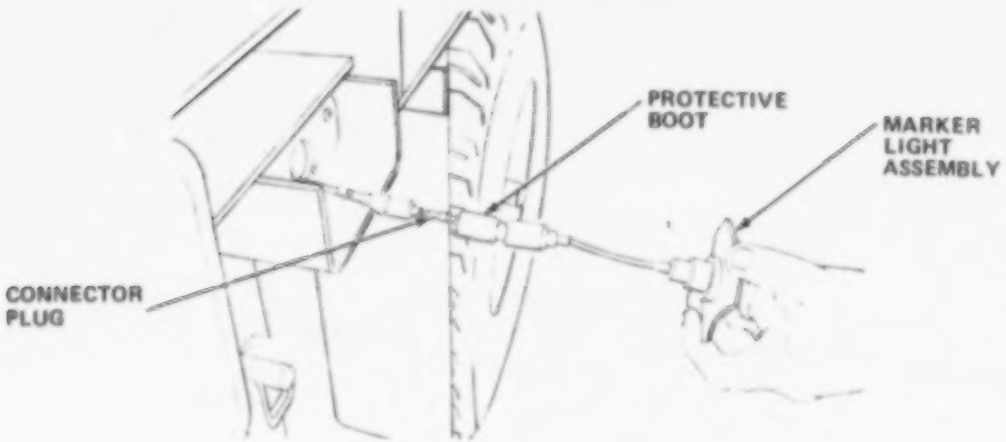
1. Remove screws.
2. Remove cover and inspect for damage. Replace if necessary.



3. Remove bulb and visually check for broken filament or other damage. Replace bulb if necessary.

4. Remove bulb grounding screw.

5. Remove screws, nuts, and washers from assembly.



6. Carefully pull assembly from chassis with wire connected until wire connector plug is exposed.

7. Carefully slide protective boot from connection and disconnect wire.

8. Remove blackout marker light assembly and inspect for broken wires or other signs of damage. Replace assembly if necessary.

9. Connect wire and slide protective boot over connection.

10. Install blackout marker light assembly and secure with screws, nuts, and washers.

11. Install bulb grounding screw.

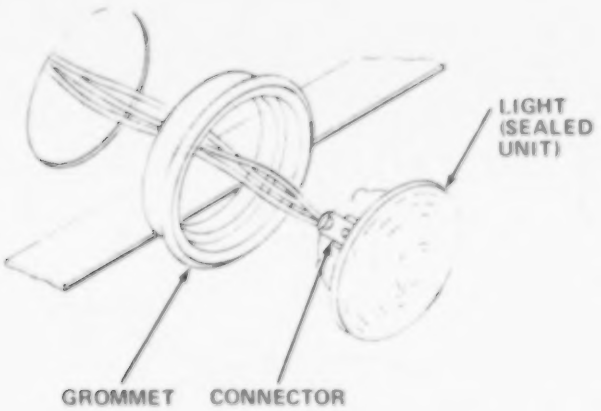
12. Install bulb.

13. Perform operational check.

14. Install blackout marker light cover and secure with screws.

4.4.1.8 REPLACE STOPLIGHTS, TURN SIGNALS, AND TAIL LIGHTS.

SUPPLIES: Bulb

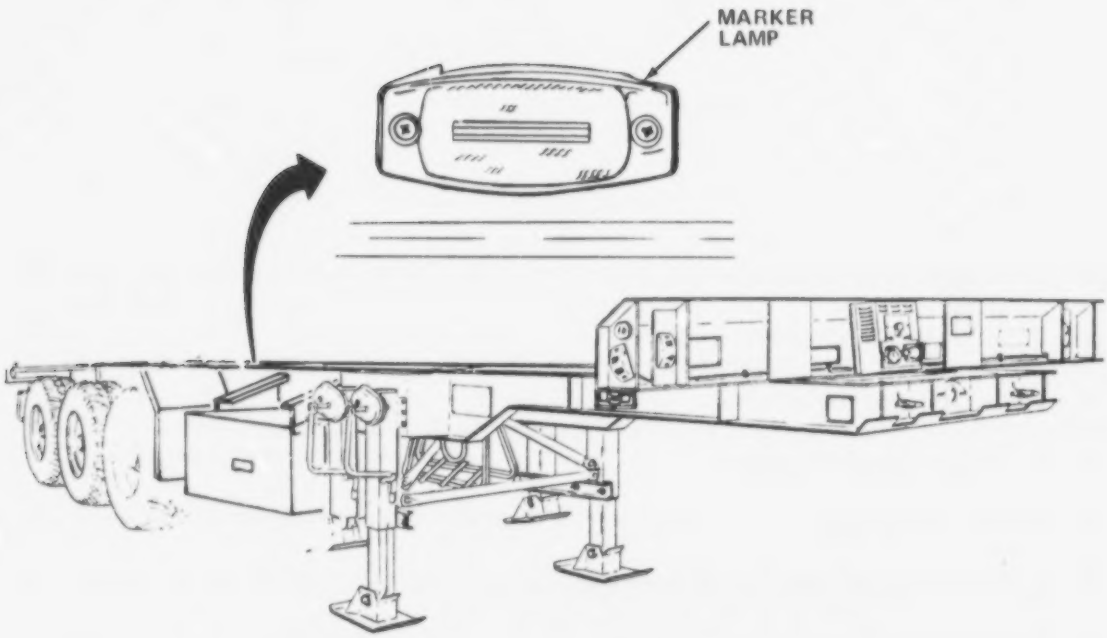


1. Press light and grommet in.
2. Remove light and grommet.
3. Disconnect inoperable light.
4. Reconnect replacement light.
5. Reinstall grommet.
6. Spray grommet with silicone spray to lubricate.
7. Press light firmly into grommet.
8. Perform operational check.

4.4.1.9 REPLACE REFLECTOR.

TOOLS: Cross-Tip Screwdriver (1/4 in.)

SUPPLIES: Red Reflector
Amber Reflector

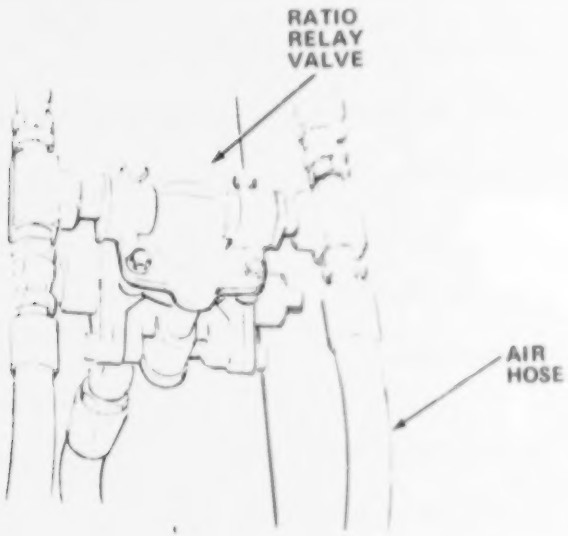


1. Remove screw holding reflector.
2. Pull off reflector and gasket.
3. Insert new gasket and reflector.
4. Replace screw and tighten.

4.4.1.10 REPLACE RATIO RELAY VALVE.

TOOLS: Combination Wrench Set

SUPPLIES: Ratio Relay Valve
Thread Sealant (TFL) (Item 3, Appendix E)
Cotton Cloth
Solvent, P-D-680 (Item 4, Appendix E)



NOTE

Male pipe end of air hose does not swivel. To remove the male end of an air hose from a component, disconnect the swivel at the other end of the air line. Then disconnect the air line from the chassis so that the male pipe end turns freely.

1. Depressurize system by opening moisture ejectors.
2. Label and disconnect air hoses.
3. Remove T-fittings and couplings.
4. Remove lower couplings from valve.
5. Remove relay valve from tank.

WARNING

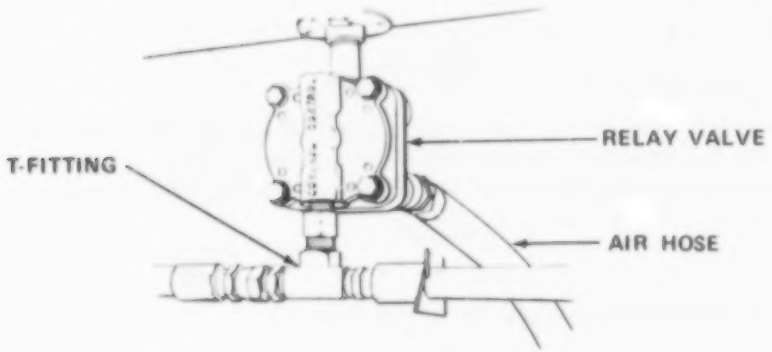
CLEANING SOLVENT IS POTENTIALLY DANGEROUS. AVOID REPEATED AND PROLONGED SKIN CONTACT AND BREATHING OF VAPORS. USE IN WELL VENTILATED AREA. CLEANING SOLVENT IS TOXIC, VOLATILE, AND COMBUSTIBLE. WEAR PROTECTIVE GOGGLES AND GLOVES TO PREVENT PERSONAL INJURY.

6. Clean fitting threads on new valve with solvent-saturated, cotton cloth.
7. Coat threads with sealant and install new relay valve to tank.
8. Coat threads with sealant and reinstall T-fittings and couplings to tank.
9. Reconnect air hoses and tighten fittings.
10. Pressurize system with air.

4.4.1.11 REPLACE QUICK RELEASE VALVE.

TOOLS: Combination Wrench Set

SUPPLIES: Relay Valve
Thread Sealant (TFL) (Item 3, Appendix E)
Cotton Cloth
Solvent, P-D-680 (Item 4, Appendix E)



NOTE

Male pipe end of air hose does not swivel. To remove the male end of an air hose from a component, disconnect the swivel at the other end of the air line. Then disconnect the air line from the chassis so that the male pipe end turns freely.

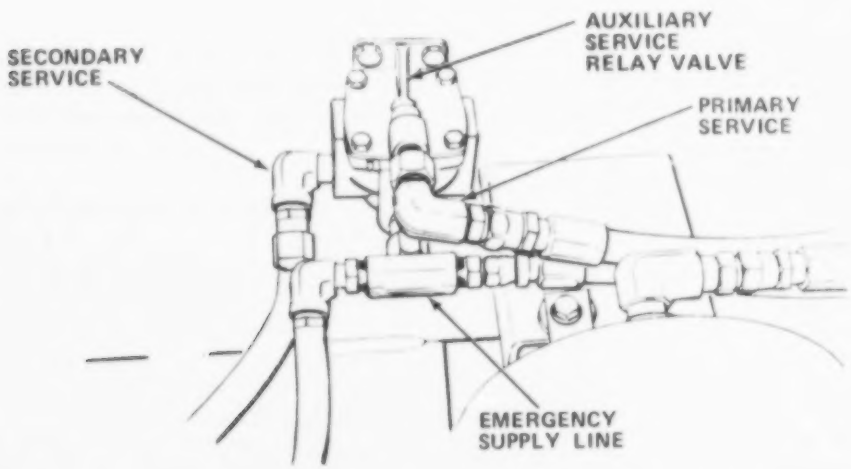
1. Depressurize system by opening moisture ejectors.
2. Label and disconnect air hoses.
3. Remove T-fittings and couplings.
4. Remove lower coupling from valve.
5. Remove valve from tank.
6. Clean fitting threads on new valve with solvent-saturated, cotton cloth.
7. Coat threads with sealant and install new relay valve to tank.
8. Coat threads with sealant and reinstall lower couplings to valve.
9. Coat threads with sealant and reinstall T-fittings and couplings to tank.
10. Reconnect air hoses and tighten fittings.
11. Pressurize system with air.

4.4.1.12 REPLACE AUXILIARY SERVICE RELAY VALVE.

TOOLS: Tool Kit

SUPPLIES: Auxiliary Service Valve
Thread Sealant (TFL) (Item 3, Appendix E)

1. Depressurize air system by opening moisture ejector valves.



NOTE

Male pipe end of air hose does not swivel. To remove the male end of an air hose from a component, disconnect the swivel at the other end of the air line. Then disconnect the air line from the chassis so that the male pipe end turns freely.

2. Label and disconnect air hoses.
3. Remove nuts, washers, bolts, and relay valve from chassis.
4. Remove fittings from valve.

CAUTION

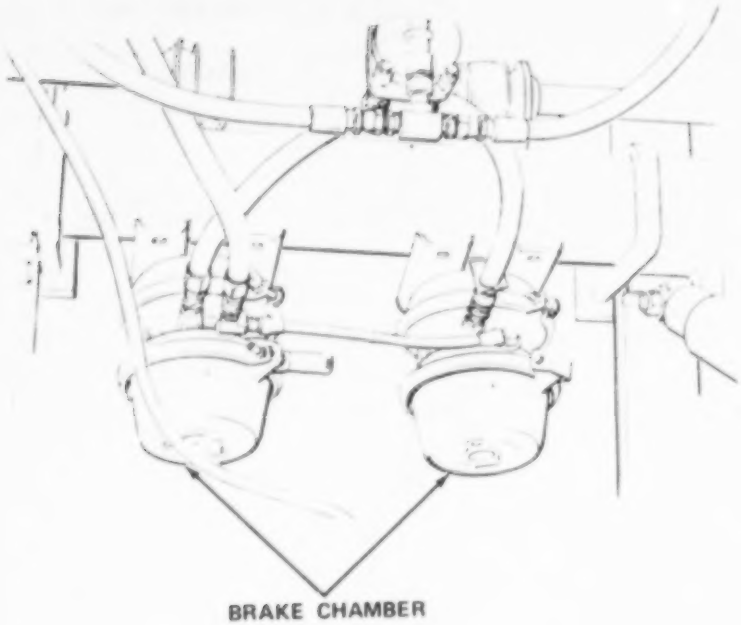
DO NOT ALLOW EXCESS THREAD SEALANT TO ENTER VALVE.

5. Apply thread sealant to threads of fittings and reinstall.
6. Install new relay valve to frame.
7. Reconnect air hoses.

4.4.1.13 REPLACE BRAKE CHAMBER.

TOOLS: Combination Wrench Set
Pliers
Release Stud Assembly (OVE)

SUPPLIES: Brake Chamber



BRAKE CHAMBER

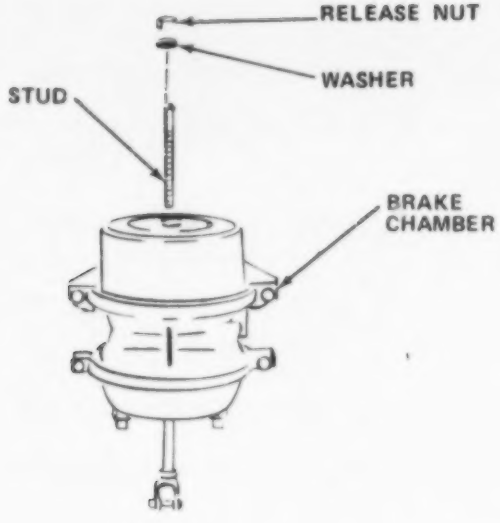
1. Depressurize system by opening moisture ejectors.

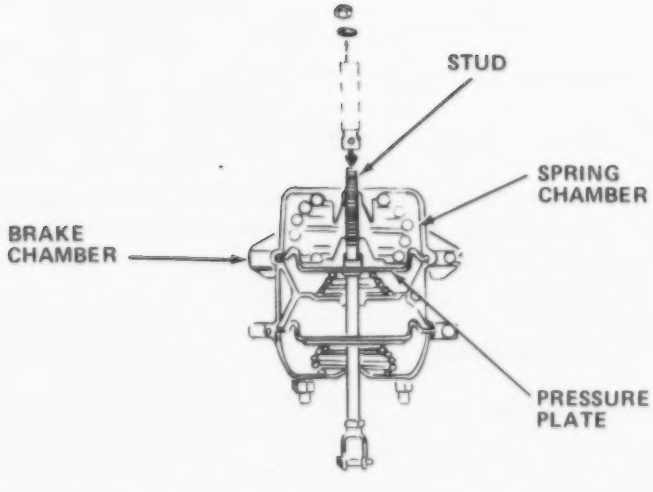
NOTE

Male pipe end of air hose does not swivel. To remove the male end of an air hose from a component, disconnect the swivel at the other end of the air line. Then disconnect the air line from the chassis so that the male pipe end turns freely.

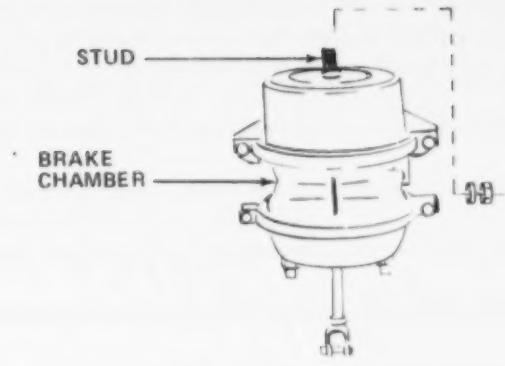
2. Label and disconnect air hoses.

3. Remove cap from chamber.

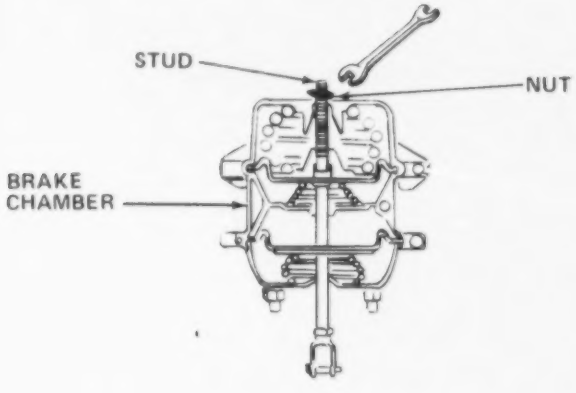




4. Insert release stud through opening (where cap was removed) in the spring chamber and insert into pressure plate.



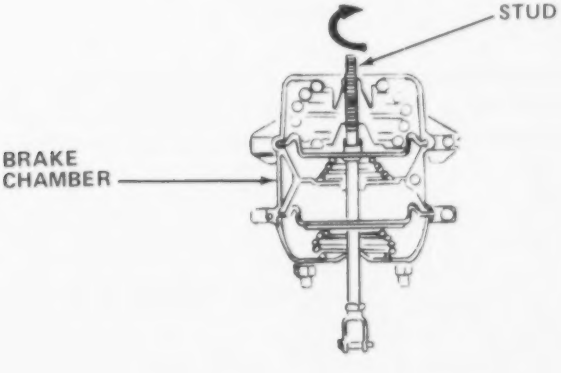
5. Turn release stud 1/4 turn to right in pressure plate to secure cross pin area of pressure plate and lock into manual release position.



6. Install release stud washer and nut onto release stud.

CAUTION

DO NOT OVERTIGHTEN RELEASE STUD (MAXIMUM 50 LBS TORQUE). EXCESSIVE TORQUE MAY DAMAGE PRESSURE PLATE.



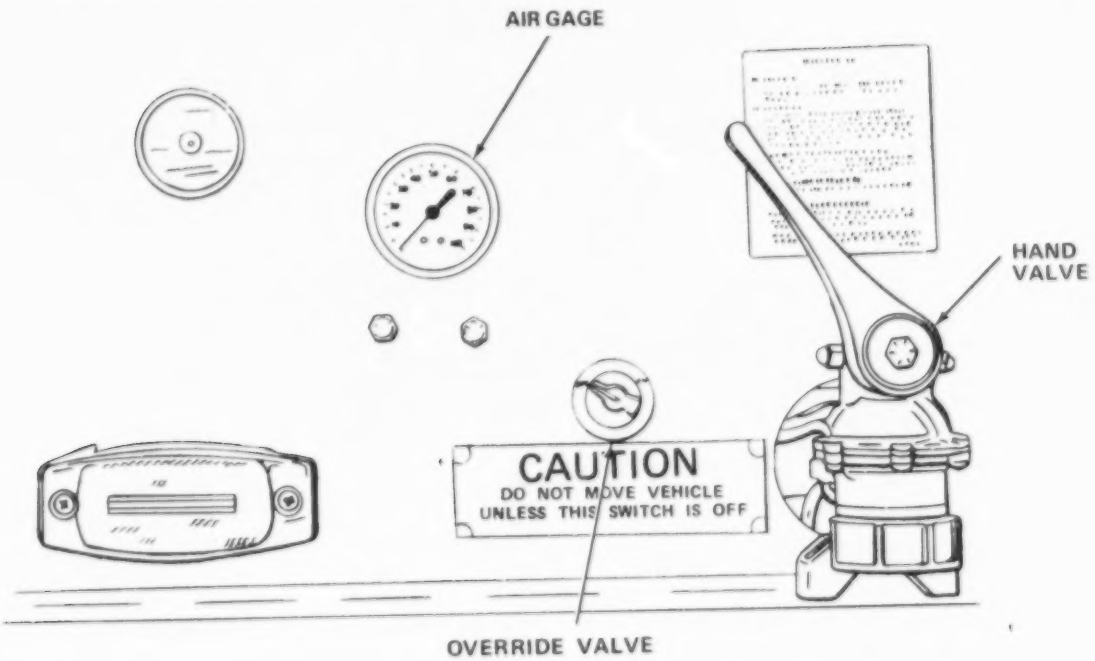
7. Turn release stud assembly nut with wrench until compression spring is fully caged. While doing so, check visually to make certain the pushrod (adapter pushrod or service pushrod) is retracting while tightening the release stud assembly nut.
8. Remove cotter pin and clevis pin from slack adjuster.
9. Remove two retaining nuts and washer, and remove brake chamber.
10. Install new brake chamber to brackets and secure with nuts and washers.
11. Reinstall clevis and clevis pin to slack adjuster and secure with cotter pin.
12. Loosen release stud nut, and remove nut and washer.
13. Turn release stud to left to release cross pin and remove stud.
14. Reinstall chamber cap.
15. Reconnect air hose and tighten connector assembly.
16. Adjust brakes (4.4.1.23).

4.4.1.14 REPLACE OVERRIDE VALVE SELECTOR.

TOOLS: Flat-Tip Screwdriver
Combination Wrench Set
Socket Head Wrench Set

SUPPLIES: Manual Override Valve
Thread Sealant (TFL) (Item 3, Appendix E)
Wire Ties

1. Depressurize system by opening moisture ejectors.



2. Loosen setscrew and remove knob.

NOTE

Male pipe end of air hose does not swivel. To remove the male end of an air hose from a component, disconnect the swivel at the other end of the air line. Then disconnect the air line from the chassis so that the male pipe end turns freely.

3. Cut wire ties.

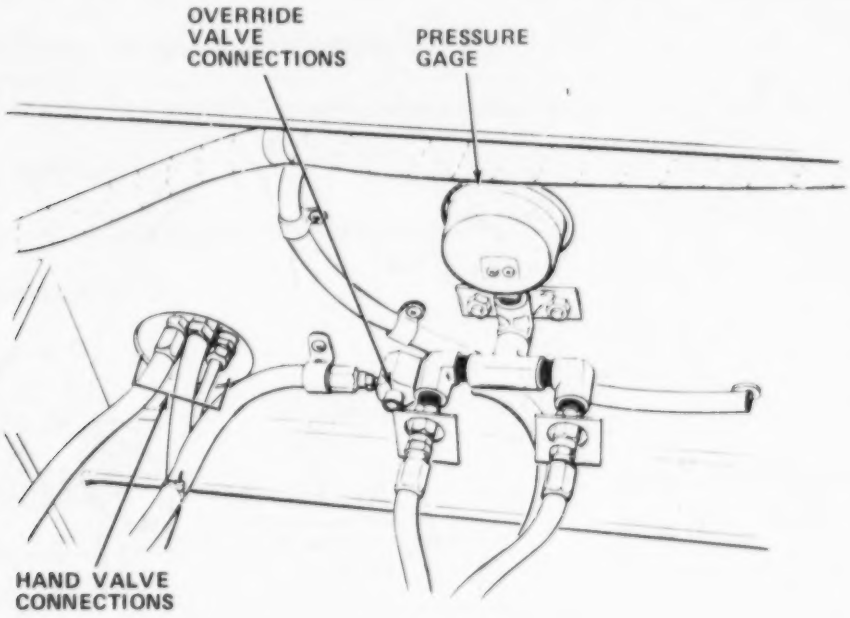
4. Remove retaining nut, washer, and switch plate.

5. Remove valve assembly and air hoses from rear of frame.
6. Remove air hoses from valve assembly and pilot valve.

NOTE

Apply sealant to threads as necessary.

7. Reconnect air hoses to new valve and reconnect to pilot valve.



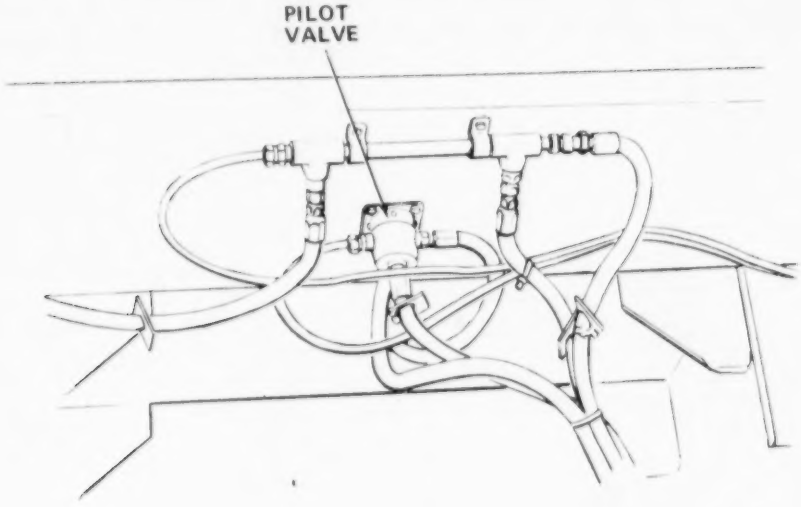
8. Reinstall valve assembly with attached hoses to chassis.
9. Reinstall retaining nut, washer, and switch plate.
10. Secure air hoses with new wire ties.
11. Reinstall knob and secure with setscrew.
12. Repressurize system.

4.4.1.15 REPLACE PILOT VALVE.

TOOLS: Combination Wrench Set
Cross-Tip Screwdriver

SUPPLIES: Pilot Valve
Thread Sealant (TFL) (Item 3, Appendix E)

1. Depressurize system by opening moisture ejectors.



NOTE

Male pipe end of air hose does not swivel. To remove the male end of an air hose from a component, disconnect the swivel at the other end of the air line. Then disconnect the air line from the chassis so that the male pipe end turns freely.

2. Label and disconnect air hoses to pilot valve.
3. Remove cross-tipped screws and pilot valve.
4. Install new pilot valve and secure with screws.
5. Coat threads with sealant.
6. Reconnect air hoses and tighten fittings.
7. Repressurize air system.

4.4.1.16 REPLACE HAND LEVER VALVE.

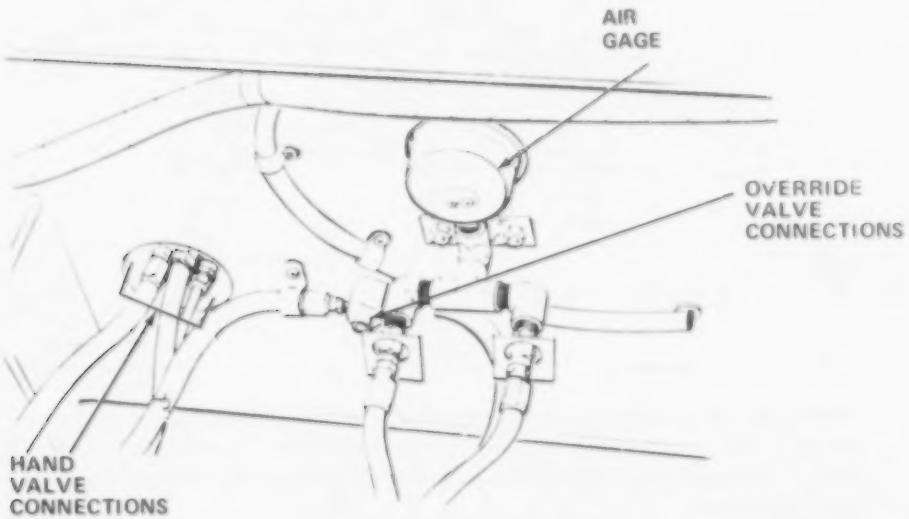
TOOLS: Combination Wrench Set

SUPPLIES: Hand Lever Valve

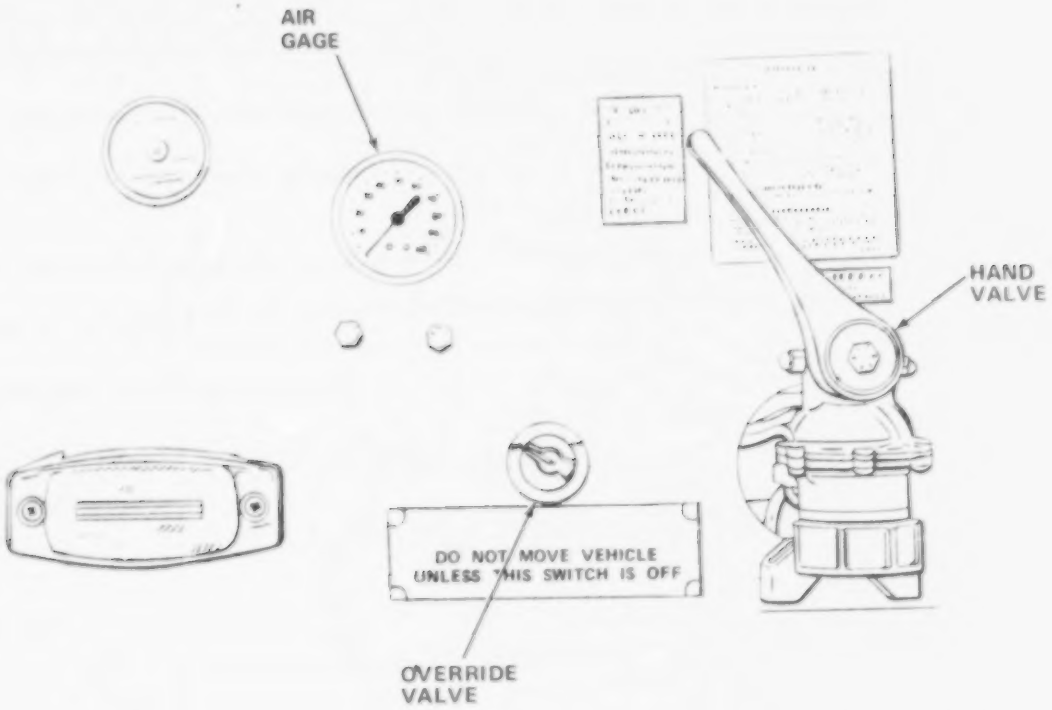
1. Depressurize system by opening moisture ejectors.

NOTE

Male pipe end of air hose does not swivel. To remove the male end of an air hose from a component, disconnect the swivel at the other end of the air line. Then disconnect the air line from the chassis so that the male pipe end turns freely.



2. Label and disconnect air hoses.



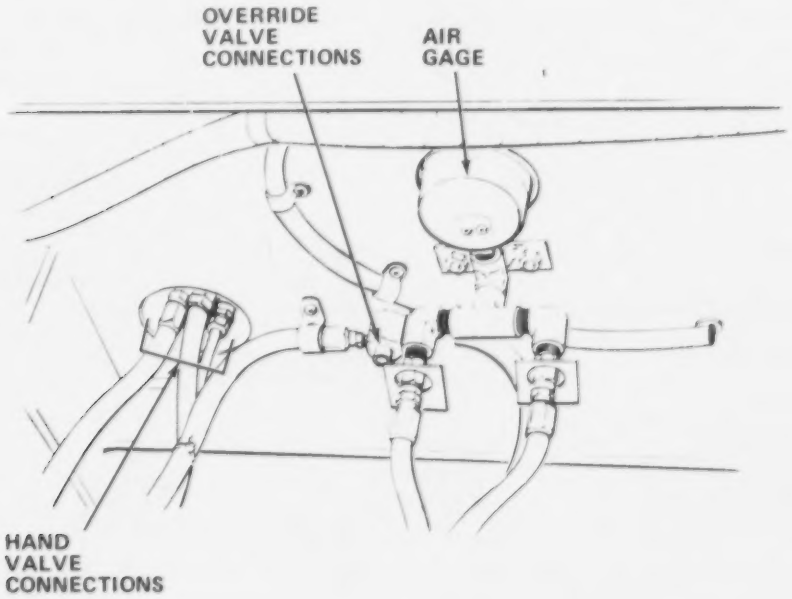
3. Remove bolts, nuts, washers, and hand valve.
4. Install new hand valve and secure with bolts, nuts, and washers.
5. Reconnect air hoses and tighten fittings.

4.4.1.17 REPLACE GAGE.

TOOLS: Combination Wrench Set

SUPPLIES: Air Gage
Thread Sealant (TFL) (Item 3, Appendix E)

1. Depressurize system by opening moisture ejectors.



NOTE

Male pipe end of air hose does not swivel. To remove the male end of an air hose from a component, disconnect the swivel at the other end of the air line. Then disconnect the air line from the chassis so that the male pipe end turns freely.

2. Label and remove air hoses.

3. Remove bolts, nuts, washers, mounting hardware, and gage from chassis.

4. Remove gage from mounting hardware.

CAUTION

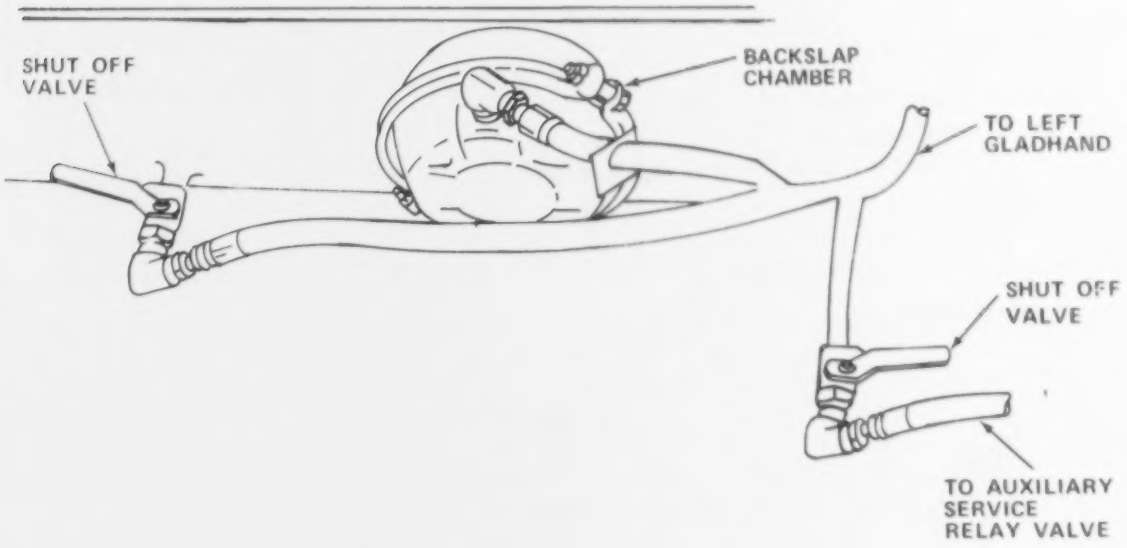
DO NOT ALLOW EXCESS SEALANT TO ENTER AIR SYSTEM. SEALANT MAY OBSTRUCT LINES IF INTRODUCED INTO AIR SYSTEM.

5. Apply thread sealant to gage and reinstall new gage.
6. Secure new gage with bolts, nuts, and washers.
7. Reconnect air hoses and tighten securely.

4.4.1.18 REPLACE BACKSLAP CHAMBER.

TOOLS: Tool Kit

SUPPLIES: Air Brake Chamber



1. Close left gladhand shutoff valve.

NOTE

Male pipe end of air hose does not swivel. To remove the male end of an air hose from a component, disconnect the swivel at the other end of the air line. Then disconnect the air line from the chassis so that the male pipe end turns freely.

2. Disconnect air hose from chamber.

3. Remove nuts and washers from chamber.
4. Remove clip and pin securing clevis to backslap lever.
5. Remove backslap chamber.
6. Reinstall clevis to backslap lever with clip and pin.
7. Install new backslap chamber.
8. Reinstall washers and nuts on chamber.

CAUTION

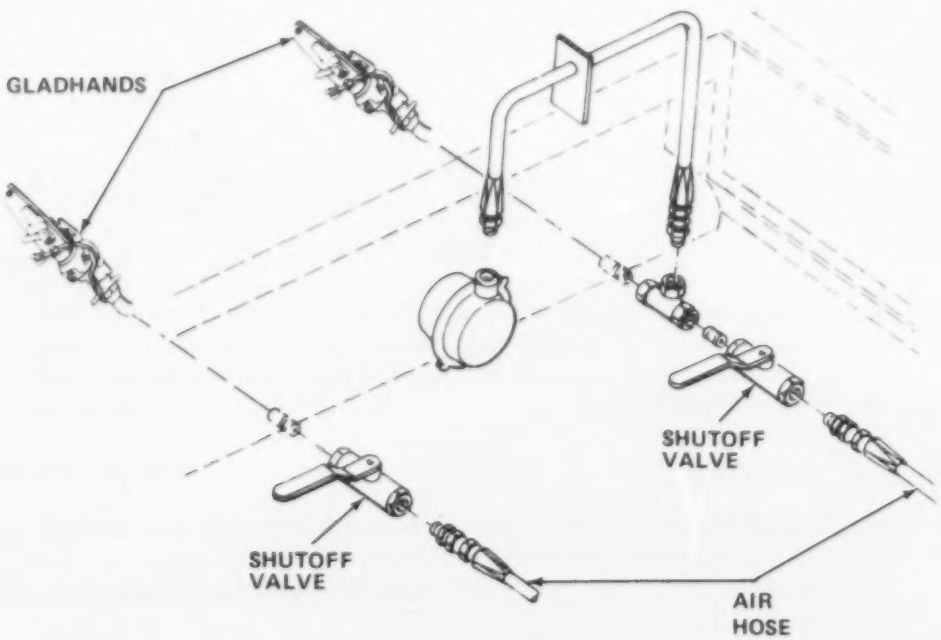
AIR HOSE MAY BE DAMAGED IF TWISTED.

9. Reconnect air hose and tighten.

4.4.1.19 REPLACE GLADHANDS AND SHUTOFF VALVES.

TOOLS: Tool Kit

SUPPLIES: Shutoff Valve
Gladhand
Thread Sealant (TFL) (Item 3, Appendix E)



1. Depressurize air system by opening moisture ejectors.

NOTE

Male pipe end of air hose does not swivel. To remove the male end of an air hose from a component, disconnect the swivel at the other end of the air line. Then disconnect the air line from the chassis so that the male pipe end turns freely.

2. Disconnect air hoses from shutoff valves.

3. Remove shutoff valves.

4. Remove gladhands.

CAUTION

DO NOT ALLOW EXCESS SEALANT TO ENTER AIR LINES. SEALANT MAY OBSTRUCT AIR LINE IF INTRODUCED INTO AIR SYSTEM.

5. Apply sealant to threads and install new valves and gladhands.

6. Reconnect hoses.

4.4.1.20 REPLACE AIR SPRING.

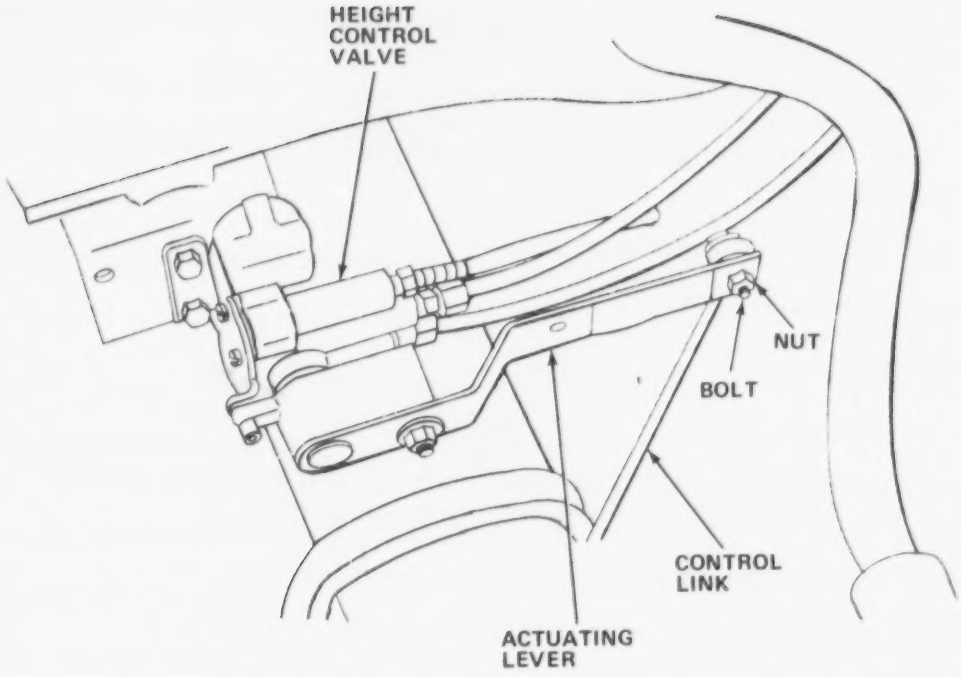
TOOLS: Tool Kit
Torque Wrench (0 - 150 ft lbs)

SUPPLIES: Air Spring
Thread Sealant (Item 3, Appendix E)

CAUTION

TO PREVENT PERSONNEL INJURY, BE SURE CHASSIS IS PARKED ON LEVEL GROUND AND IS UNHOOKED FROM TRUCK BEFORE PROCEEDING.

1. Extend chassis leveling jacks to raise chassis high enough to relieve tension on air spring.

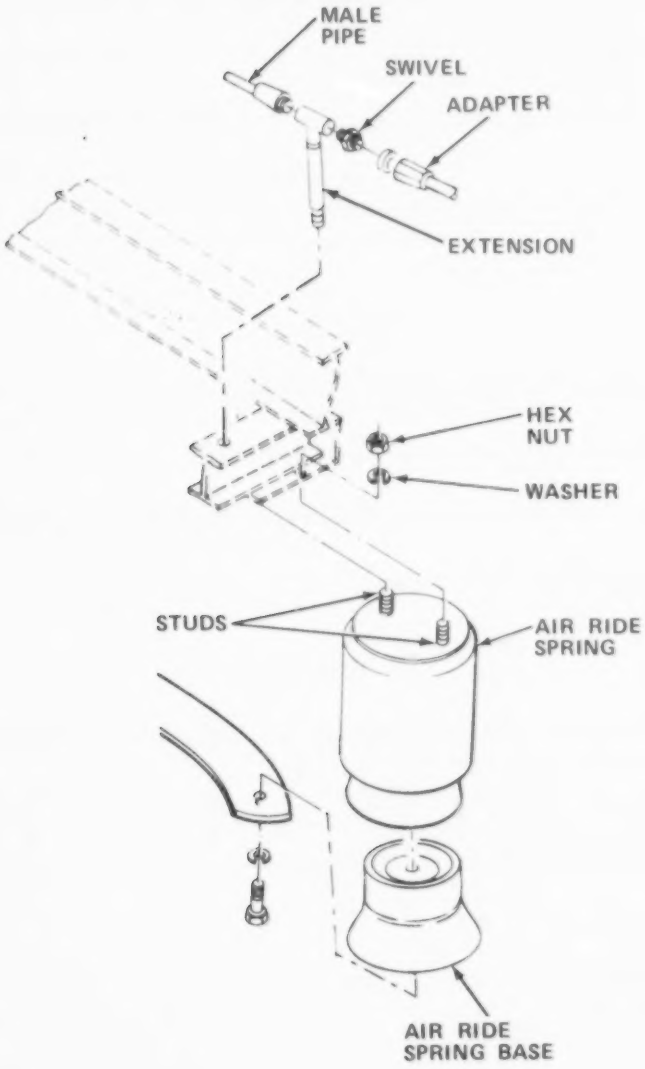


2. Remove nut and bolt which secure control link to height control valve actuating lever.

3. Depress actuating lever to release air pressure on air spring. (Allow approximately five seconds for air to start flowing through valve, due to built-in time delay.) Hold lever in position until pressure in air spring has equalized with atmospheric pressure.

WARNING

ACTUATING LEVER MUST REMAIN IN DEFLATE OR NEUTRAL POSITION TO ENSURE SYSTEM AIR PRESSURE IS NOT APPLIED TO AIR SPRING DURING MAINTENANCE. PRESSURIZATION OF AIR SPRING MAY RESULT IN PERSONNEL INJURY.



4. Remove bolt which secures equalizer arm to bottom of air spring.

NOTE

Male pipe end of air hose does not swivel. To remove the male end of an air hose from a component, disconnect the swivel at the other end of the air line. Then disconnect the air line from the chassis so that the male pipe end turns freely.

5. Disconnect air line at top of air spring.

6. Remove nuts which secure top of air spring to rear mounting assembly.

7. Remove air spring.

8. Install new air spring and secure to rear mounting assembly with nuts and torque to 60-70 ft lbs.

9. Secure bottom of air spring to equalizer arm with bolt and torque to 60 - 70 ft lbs.

NOTE

Be sure air spring does not twist while tightening bolt.

10. Reconnect air line at top of air spring using thread sealant.

11. Reconnect control link to height control valve and secure with nut and bolt.

12. Retract chassis leveling jacks.

NOTE

When leveling jacks have been retracted, be sure height control valve has allowed air spring to be inflated.

4.4.1.21 REPLACE WHEEL AND TIRE.

TOOLS: Socket
Breaker Bar
Extension Bar
Torque Wrench

SUPPLIES: Tire

CAUTION

USE ONLY TIRE SIZES AND TYPES LISTED ON THE SAFETY AND SERIAL PLATE ATTACHED TO THE CHASSIS.

USE ONLY WHEEL RIM WIDTHS AND OFFSETS LISTED ON THE SAFETY AND SERIAL PLATE ATTACHED TO THE CHASSIS.

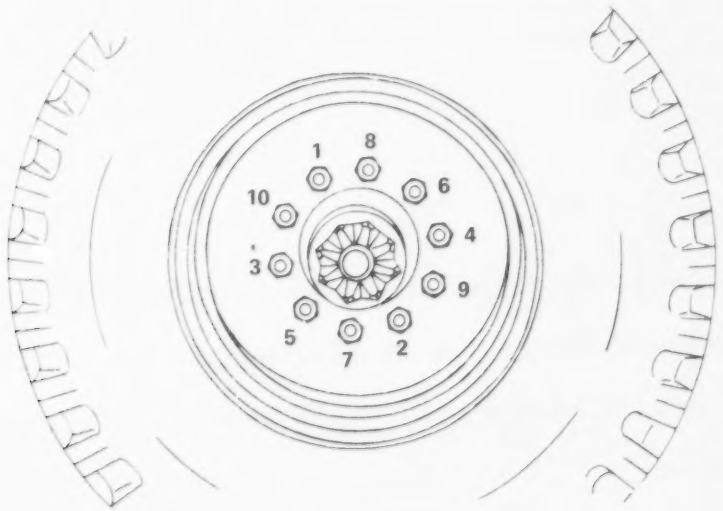
1. Loosen, but do not remove, ten wheel nuts.

2. Using leveling jack, lift chassis until tire is just clear of ground.
3. Remove ten wheel nuts.
4. Remove tire and wheel from axle.
5. Remove tire from wheel and repair or replace.
6. Reinstall tire to wheel and inflate to 85 psi (5.98 kg/cm^2) maximum.

CAUTION

TIRES MUST BE MATCHED. VALVES SHOULD ALL BE POINTED OUTWARD. ROTATION SHOULD BE FRONT TO REAR ONLY.

7. Reinstall tire and wheel to axle.

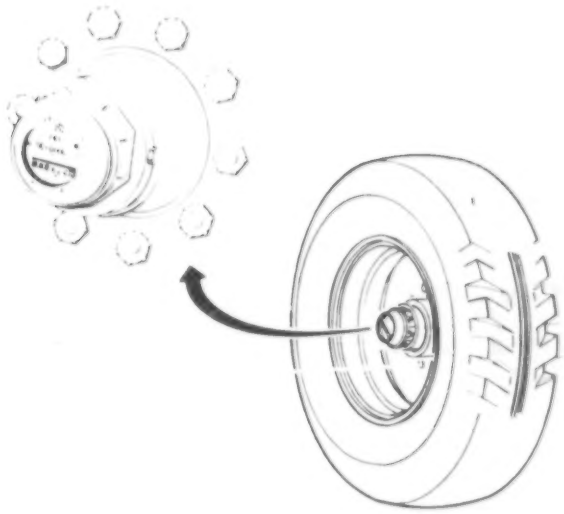


8. Reinstall wheel nuts to studs. Tighten alternately in sequence shown to 450 - 500 ft lbs (332 - 369 N • m) torque.
9. Lower tire to ground.
10. Operate chassis a short distance (approximately 50 miles) and check wheel nuts for tightness. Retorque where necessary.

4.4.1.22 REPLACE HUBODOMETER.

TOOLS: Bar, Breaking (OVE)
Special Hub Socket (OVE)

SUPPLIES: Hubodometer



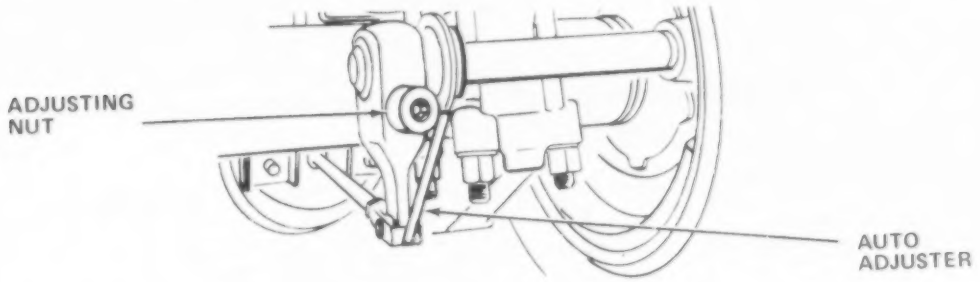
1. Remove hubcap.
2. Remove nut and washer which secures hubodometer to hubcap.
3. Secure new hubodometer to hubcap with nut and washer.
4. Replenish any grease that leaked out while hubcap was off.
5. Reinstall hubcap.

4.4.1.23 INITIAL BRAKE ADJUSTMENT.

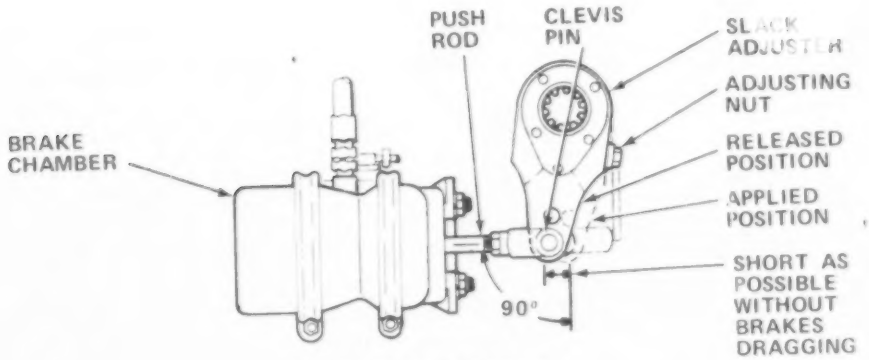
TOOLS: Ratchet 3/8 in. drive

1. Position chassis on level ground (preferably concrete) with tractor.
2. Lower chassis jacks so that chassis is in a level position.
3. Uncouple tractor from chassis, but leave brake hoses connected to apply air pressure to chassis brake system to relieve the spring brake pressure.

4. Extend chassis leveling jacks to raise wheel high enough to clear ground.



5. Position a 3/8 in. drive ratchet on the slack adjuster adjusting nut, and turn to the right until the brakes lock. Turn ratchet to the left until wheel turns freely without brake shoe drag.



ANGULAR ADJUSTMENT (BRAKE APPLIED)

6. Apply brakes and hold application. The angle on the slack adjusters should not be less than 90 degrees.

WARNING

WHEN ADJUSTING BRAKES WITH SPRING BRAKE CHAMBERS, DO NOT REMOVE PUSHROD CLEVIS PIN OR LOOSEN MOUNTING NUTS UNLESS CHAMBER IS DISABLED BY CAGING.

NOTE

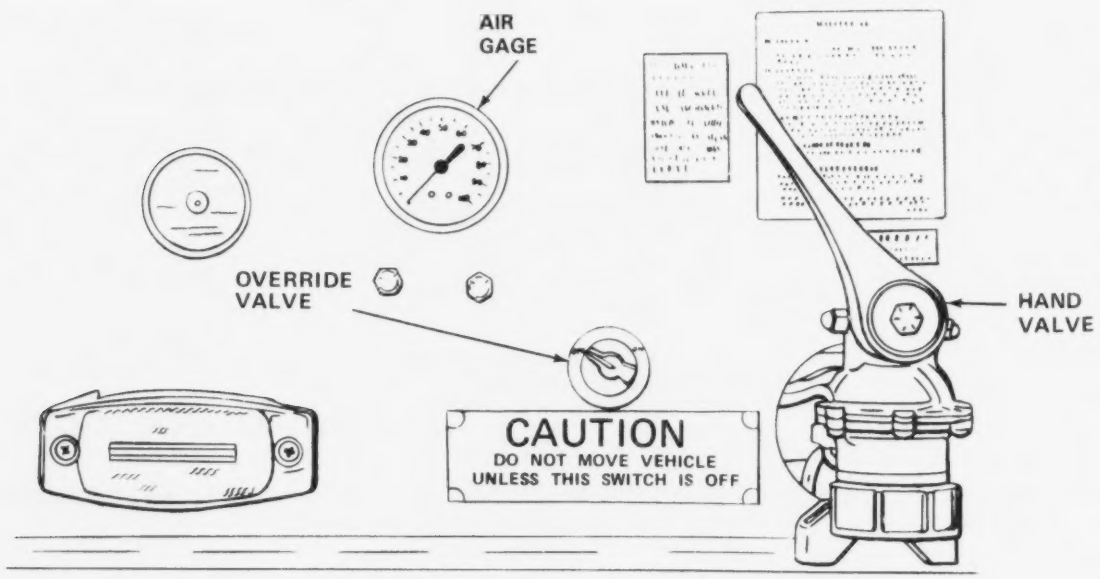
All slack adjusters should be set at the same approximate angle.

7. Adjust angle by shortening or lengthening pushrod at clevis yoke as required.
8. Repeat procedure for remaining five brakes.
9. Lower leveling jacks. Disconnect gladhands to set chassis brakes.

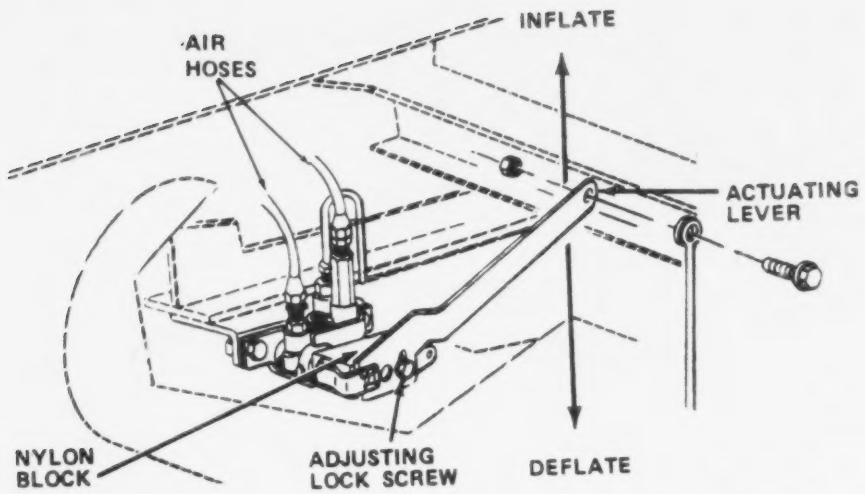
4.4.1.24 REPLACE HEIGHT CONTROL VALVE.

TOOLS: Tool Kit

SUPPLIES: Height Control Valve
Thread Sealant (Item 3, Appendix E)



1. Turn manual override valve selector switch to ON.

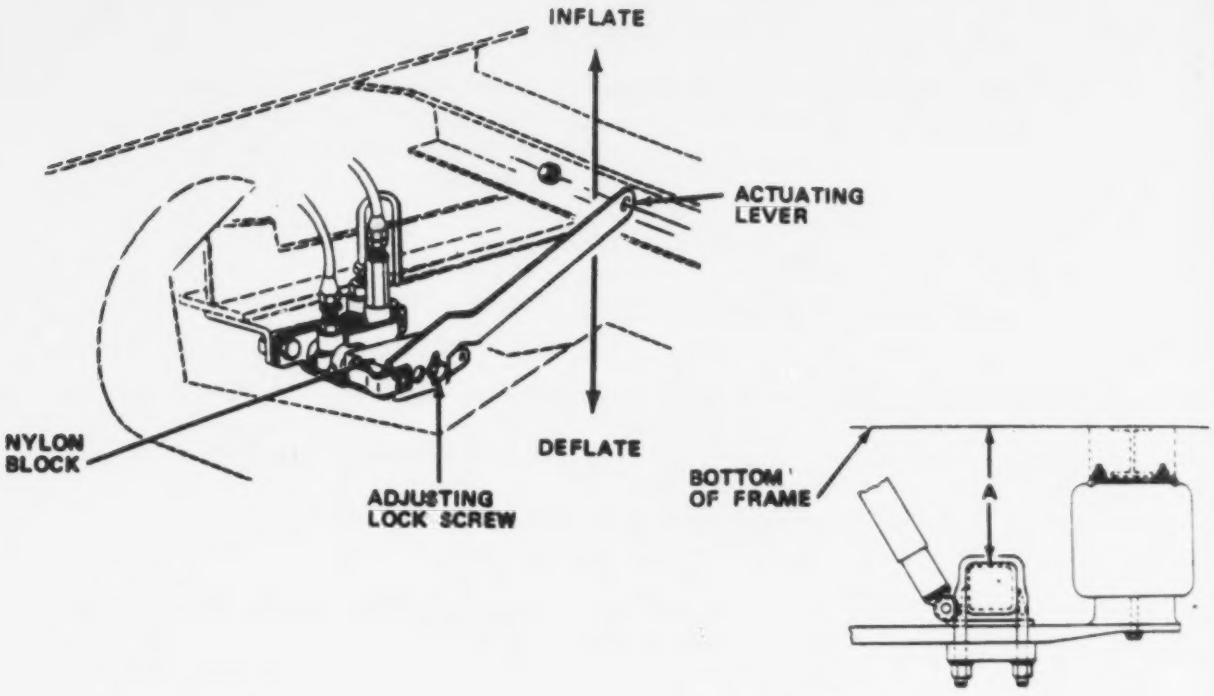


2. Label and disconnect air hoses.
3. Remove bolt and nut which retains linkage to valve arm.
4. Remove bolts, nuts, washers, and valve from chassis.
5. Install new valve to chassis and secure with bolts, nuts, and washers.
6. Reinstall linkage and secure with bolt, nut, and washers.
7. Reconnect air hoses with thread sealant and tighten connectors securely.
8. Turn manual override valve selector switch to OFF.

NOTE

Allow approximately 5 seconds for air to start flowing through valve to built-in time delay.

best copy available



9. Loosen adjustment screw and move nylon block up or down until desired frame-to-axle height is 11.75" to 12.25" (298 MM to 311 MM).

10. Tighten adjustment screw securely.

4.4.1.25 REPLACE AIR HOSES.

TOOLS: Combination Wrench Set

SUPPLIES: Hoses

1. Depressurize air system by opening moisture ejector.

NOTE

Male pipe end of air hose does not swivel. To remove the male end of an air hose from a component, disconnect the swivel at the other end of the air line. Then disconnect the air line from the chassis so that the male pipe end turns freely.

2. Label and remove hose.

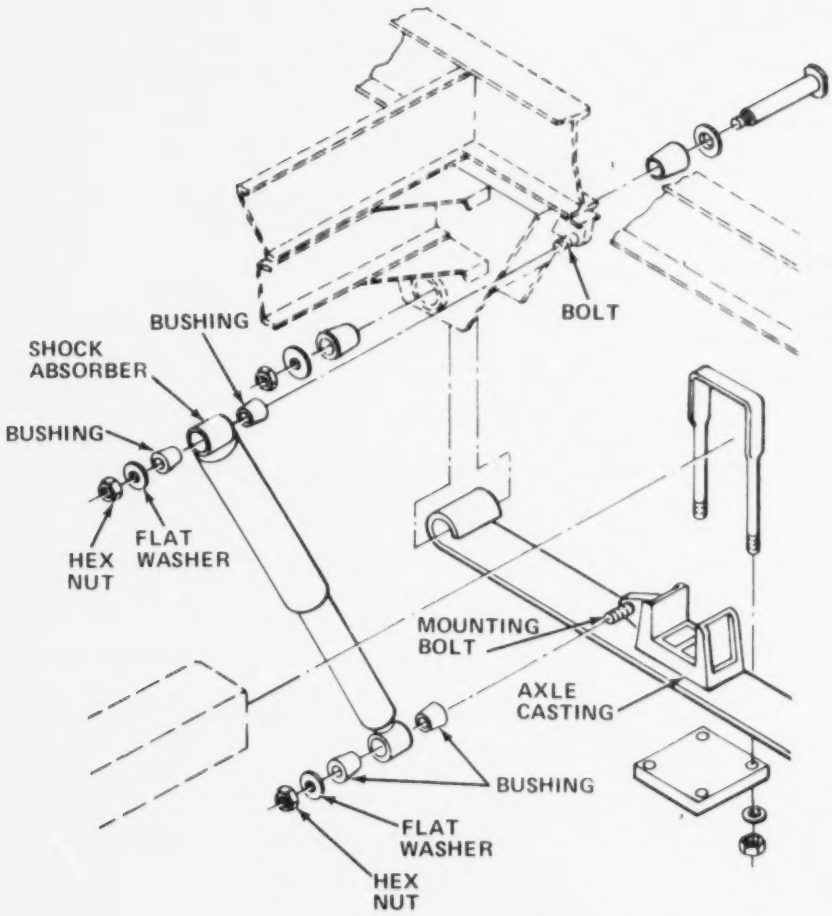
3. Remove hose tag by prying apart enough to slip over connector.

4. Remove retaining clips and hose from chassis.
5. Install new hose to chassis and retain with clips.
6. Reinstall hose tag.
7. Install new hose and tighten securely.
8. Repressurize air system.

4.4.1.26 REPLACE SHOCK ABSORBER.

TOOLS: Tool Kit
Torque Wrench (0 - 600 ft lbs)

SUPPLIES: Shock Mounting Bushing
Shock Absorber



1. Remove two nuts and flat washers which secure shock absorber to upper and lower mounts.
2. Remove shock absorber and bushings.
3. Install new shock absorber and new bushings.
4. Reinstall new shock absorber to upper and lower mounts and torque to 190 - 210 ft lbs.

4.4.1.27 REPLACE EQUALIZER AND BUSHINGS.

TOOLS: Combination Wrench (1-1/2 in.)
Torque Wrench
Hammer (4 lb)
Long Punch (3/8 pt)
Socket (1-1/2 in.)

SUPPLIES: Equalizer and Bushing

WARNING

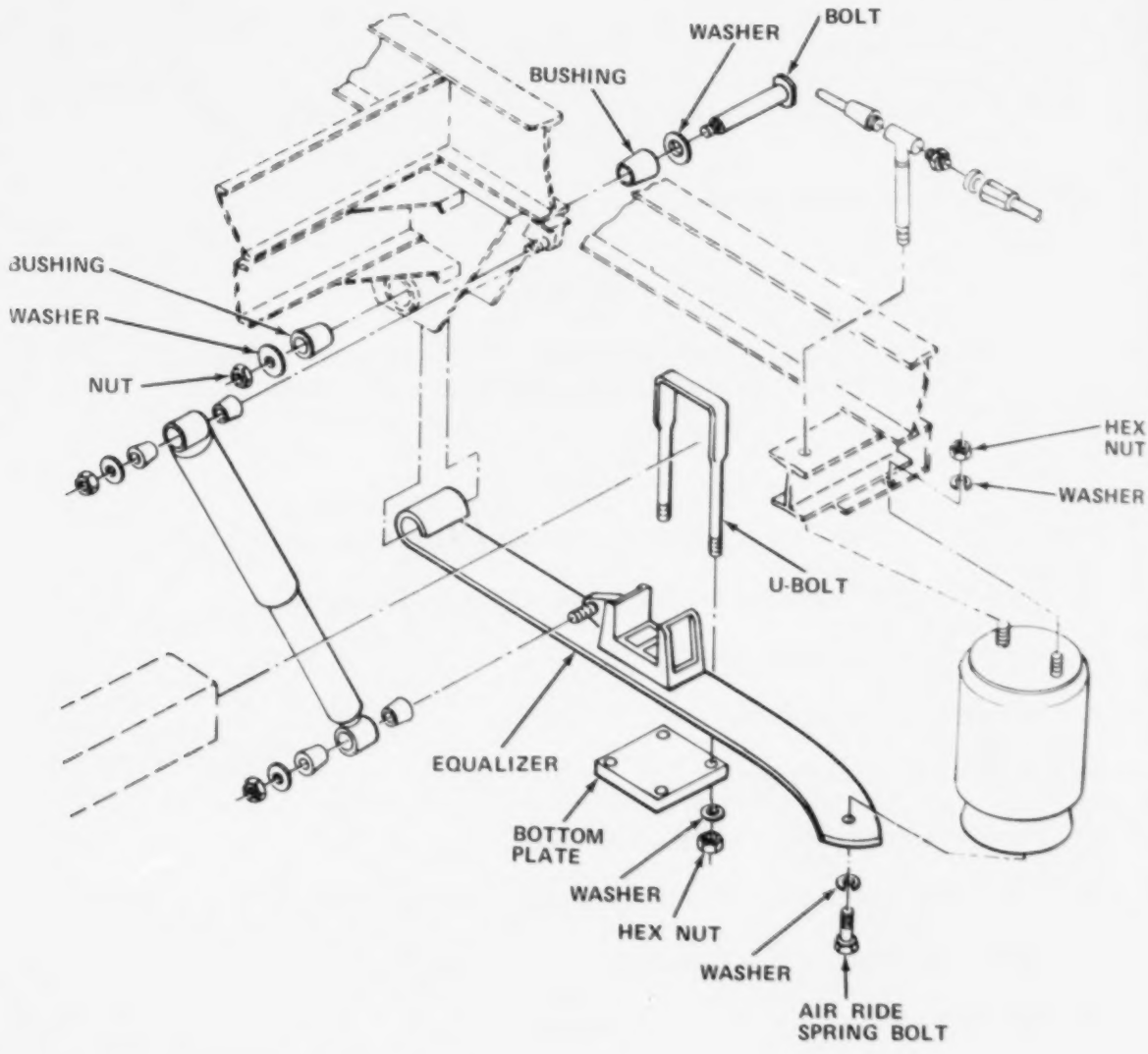
BE SURE CHASSIS IS PARKED ON LEVEL GROUND AND IS UNHOOKED FROM TRUCK BEFORE PROCEEDING TO PREVENT PERSONNEL INJURY.

NOTE

When replacing bushings, both sides should be replaced.

1. Extend chassis leveling jacks to raise wheel high enough to clear ground.
2. Remove shock absorbers (4.4.1.26).
3. Remove air springs (4.4.1.20).
4. Remove U-bolts (4.4.1.28).
5. Remove nuts and washers from equalizer bolts.
6. Using a hammer and long punch, remove equalizer bolts and washers.
7. Remove equalizer.
8. Remove bushings.
9. Replace defective parts.
10. Install new bushings.

11. Install new equalizer and secure with bolts, washers, and nuts.



12. Reinstall U-bolts (4.4.1.28).

13. Reinstall air springs (4.4.1.20).

14. Reinstall shock absorbers (4.4.1.26).

15. Reinstall wheels (4.4.1.21) and retract leveling jacks.

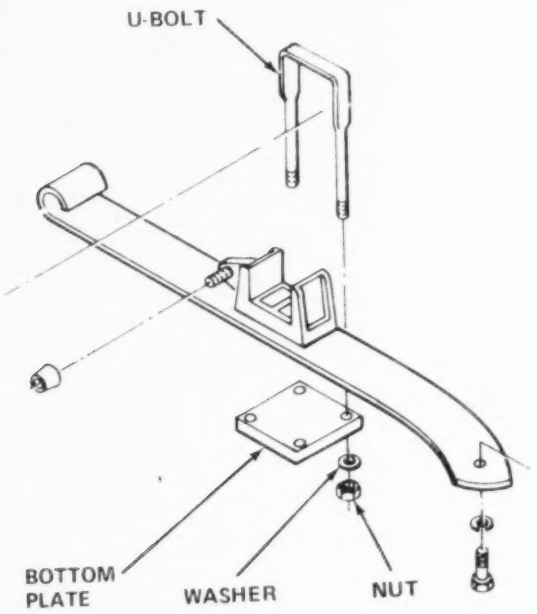
16. Lower chassis.

4.4.1.28 REPLACE U-BOLTS.

TOOLS: Torque Wrench (0 - 1000 ft lbs)

WARNING

TO PREVENT INJURY TO PERSONNEL, BE SURE CHASSIS IS PARKED ON LEVEL GROUND AND IS UNHOOKED FROM TRACTOR BEFORE PROCEEDING.

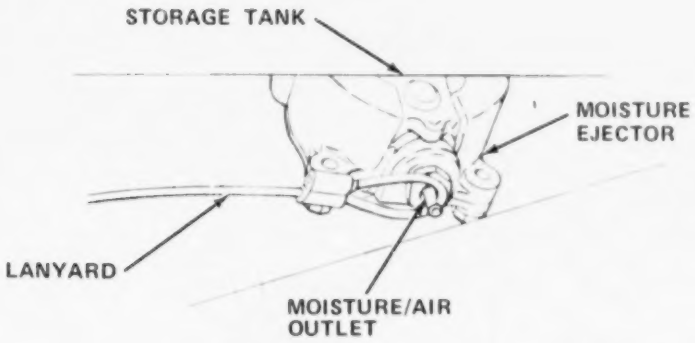


1. Extend leveling jacks to raise chassis high enough to relieve tension on U-bolts.
2. Remove nuts and washers.
3. Remove bottom plate.
4. Remove U-bolts.
5. Install new U-bolts.
6. Install bottom plate and secure to U-bolt with nuts and washers. Alternately torque nuts to between 700—750 ft lbs.
7. Retract chassis leveling jacks.

4.4.1.29 REPLACE MOISTURE EJECTOR.

TOOLS: Adjustable Wrench

SUPPLIES: Thread Sealant (TFL) (Item 3, Appendix E)
Automatic Moisture Ejector



1. Pull on ejector lanyard until system is depressurized.
2. Remove ring connecting ejector lever to lanyard.
3. Unscrew ejector housing from bottom of tank.

CAUTION

DO NOT ALLOW THREAD SEALANT TO CONTAMINATE AIR SYSTEM.

4. Spread thread sealant on threads of new ejector housing. Clean old thread sealant from tank threads.
5. Screw new ejector into bottom of tank. Tighten securely.
6. Attach ring and lanyard cable to ejector.

Section V. PREPARATION FOR STORAGE OR SHIPMENT

4.5.1 PREPARATION FOR STORAGE OR SHIPMENT.

1. For administrative storage of equipment, refer to TM 740-90-1.

2. In the event individual items of equipment must be removed for repair or replacement, contact your battalion for packing and shipping instructions.

CHAPTER 5

DIRECT/GENERAL SUPPORT MAINTENANCE INSTRUCTIONS

Section I. REPAIR PARTS, SPECIAL TOOLS, AND EQUIPMENT

5.1. REPAIR PARTS; SPECIAL TOOLS; TEST, MEASUREMENT, AND DIAGNOSTIC EQUIPMENT; AND SUPPORT EQUIPMENT.

5.1.1 COMMON TOOLS AND EQUIPMENT. For authorized common tools and equipment, refer to the Modified Table of Organization and Equipment (MTOE) applicable to your unit.

5.1.2 SPECIAL TOOLS; TEST, MEASUREMENT, AND DIAGNOSTIC EQUIPMENT; AND SUPPORT EQUIPMENT. Special tools; test, measurement, and diagnostic equipment; and support equipment required for the repair of this equipment are found in the Repair Parts and Special Tools List (RPSTL) (para 5.1.3).

5.1.3 REPAIR PARTS. Repair parts for this equipment are listed in TM 5-2330-305-24P, Repair Parts and Special Tools List (RPSTL), covering Organizational and Direct/General Support maintenance for this equipment.

Section II. TROUBLESHOOTING

5.2. TROUBLESHOOTING. There are no specific instructions for troubleshooting at the Direct/General Support Maintenance level. Refer to Table 4-2 in Organizational Maintenance to isolate any malfunctions.

Section III. MAINTENANCE PROCEDURES

5.3. MAINTENANCE PROCEDURES.

5.3.1 SCOPE. This section contains the step-by-step procedures for performing Direct/General Support Maintenance for the Chassis, Semitrailer. Personnel required are listed only if the task requires more than one. If personnel are not listed, it means one person can do the task.

5.3.2 GENERAL. There are no procedures for the removal and installation of the major components and assemblies which are the responsibility of Direct/General Support Maintenance. All major components or assemblies require disassembly during repair and are not included in this section.

INDEX

PROCEDURES	PARAGRAPH
Repair Landing Gear and Leveling Jack Assemblies	5.3.2.1
Replace Air Tank	5.3.2.2
Repair Hub/Drum Assembly	5.3.2.3
Replace Cam Bearing	5.3.2.4
Replace Brake Shoe Lining	5.3.2.5

5.3.2.1 REPAIR LANDING GEAR AND LEVELING JACK ASSEMBLIES.

TOOLS: Tool kit, Mechanic's Automotive

SUPPLIES: Grease, GGP (Item 2, Appendix E)
Solvent, P-D-680 (Item 6, Appendix E)

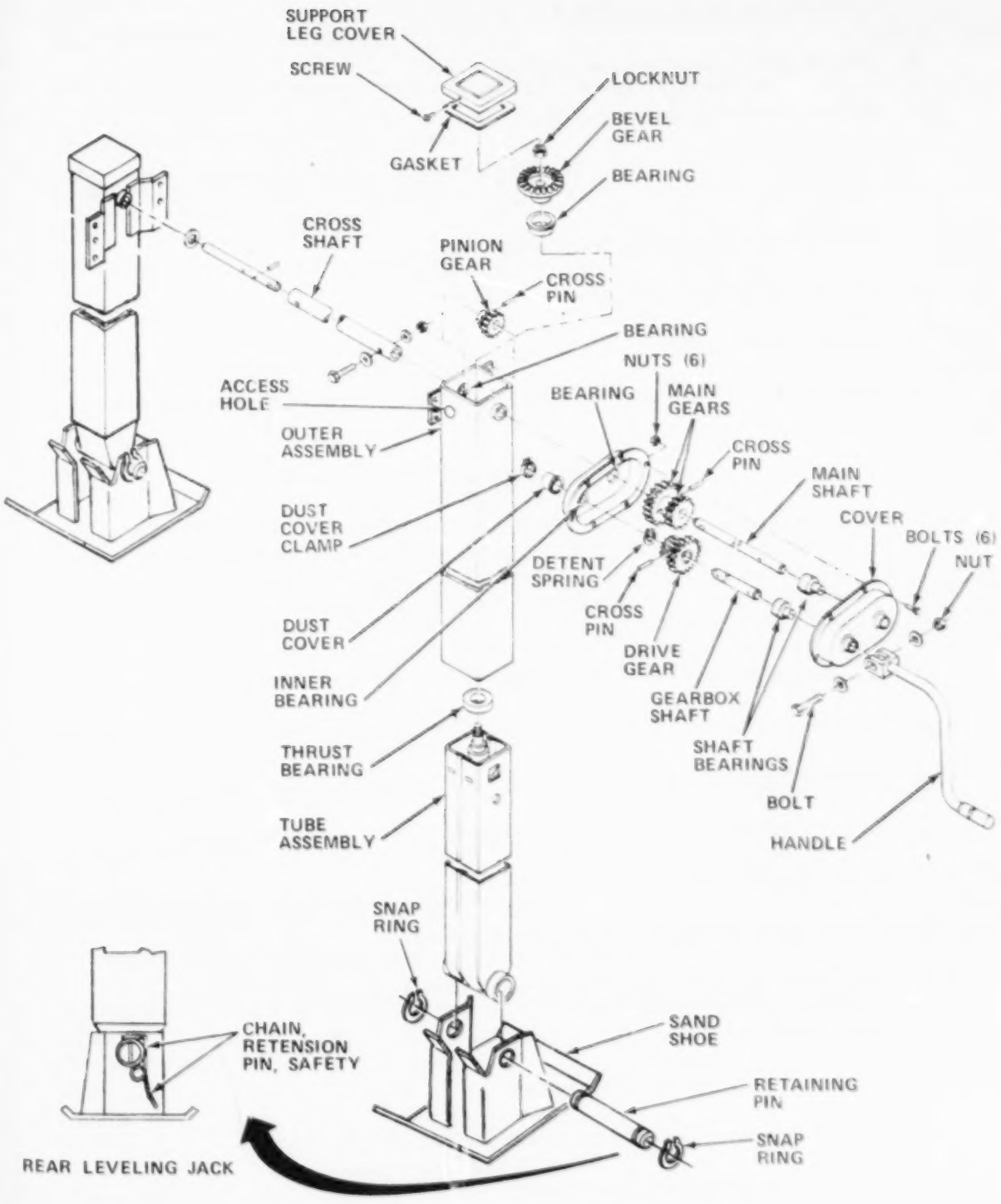
WARNING

TO PREVENT INJURY TO PERSONNEL BE SURE CHASSIS IS PARKED ON LEVEL GROUND AND IS UNHOOKED FROM TRACTOR BEFORE PROCEEDING.

NOTE

Landing gear and leveling jack maintenance procedures are identical, with the following exception: landing gear assembly requires the cross shaft to be disconnected from the main shaft.

1. Remove leveling jack (4.4.1.1) or remove landing gear (4.4.1.2).
2. Remove handle.
3. Remove gearbox cover.
4. Remove gearbox shaft bearings.
5. Remove cross pins, which secure main gears to main shaft and drive gear to gearbox shaft. Remove gears.
6. Remove dust cover clamp and dust cover.


SUPPORT LEG COVER
SCREW
GASKET
LOCKNUT
BEVEL GEAR
BEARING
CROSS SHAFT
PINION GEAR
CROSS PIN
BEARING
NUTS (6)
ACCESS HOLE
OUTER ASSEMBLY
BEARING
MAIN GEARS
CROSS PIN
MAIN SHAFT
COVER
BOLTS (6)
NUT
DUST COVER CLAMP
DETENT SPRING
CROSS PIN
DRIVE GEAR
DUST COVER
INNER BEARING
GEARBOX SHAFT
SHAFT BEARINGS
BOLT
HANDLE
THRUST BEARING
TUBE ASSEMBLY
SNAP RING
CHAIN, RETENSION PIN, SAFETY
SAND SHOE
RETAINING PIN
SNAP RING
REAR LEVELING JACK

7. Remove detent spring from gearbox shaft.
8. Remove gearbox shaft and inner bearing.
9. Remove support leg cover and gasket.
10. Through access hole in outer assembly, remove cross pin; remove pinion gear, main shaft, and bearings.
11. Remove locknut, bevel gear, and bearing.
12. Remove tube assembly from outer assembly.
13. Remove thrust bearing.
14. Remove retaining pin or snap rings, cross shaft and sand shoe from tube assembly.

WARNING

CLEANING SOLVENT IS POTENTIALLY DANGEROUS. AVOID REPEATED AND PROLONGED SKIN CONTACT AND BREATHING OF VAPORS. USE IN WELL VENTILATED AREA. CLEANING SOLVENT IS TOXIC, VOLATILE, AND COMBUSTIBLE. WEAR PROTECTIVE GOGGLES AND GLOVES TO PREVENT PERSONAL INJURY.

15. Clean all parts with suitable cleaning solution.
16. Check all parts for excessive wear or damage. Replace worn or damaged parts as necessary.
17. Lubricate thrust bearing with grease and install on top of tube assembly.
18. Lubricate outside portion of tube assembly which slides into outer assembly.
19. Install tube assembly into outer assembly.
20. Install bearing, bevel gear, and secure with locknut.
21. Install bearings, pinion gear, and main shaft. Secure gear with cross pin.
22. Apply a thick film of gear grease to bevel gear and pinion gear.
23. Install cover gasket and support leg cover.
24. Install inner bearing and gearbox shaft and secure with detent spring.
25. Install dust cover and secure with clamp.
26. Install main gears and drive gear. Secure gears with cross pins.

27. Install gearbox outer bearings.

28. Apply a thick film of gear grease to main gears, drive gear, and bearings.

29. Install gearbox cover.

30. Install handle. Tighten nut and bolt enough to secure handle, but allow enough slack to ensure handle can be moved.

31. Install leveling jack (4.4.1.1) or landing gear (4.4.1.2).

5.3.2.2 REPLACE AIR TANK.

TOOLS: Combination Wrench (9/16 in.)
Reservoir

SUPPLIES: Thread Sealant (TFL) (Item 5, Appendix E)
Air Tank
Wire Ties

NOTE

Male pipe end of air hose does not swivel. To remove the male end of an air hose from a component, disconnect the swivel at the other end of the air line. Then disconnect the air line from the chassis so that the male pipe end turns freely.

1. Depressurize air system by opening moisture ejector.

2. Label and disconnect air lines.

3. Remove nuts, bolts, washers, and tank from chassis.

4. Remove mounted hardware and install on new tank.

5. Apply sealant to threads and reinstall mounted hardware.

6. Reinstall air tank with mounted hardware and secure with bolts, nuts, and washers.

7. Reconnect air lines.

5.3.2.3 REPAIR HUB/DRUM ASSEMBLY.

TOOLS: Wrench Set
Flat-Tip Screwdriver (1/4 in.)
Slip-Joint Pliers
Bearing Puller
Wheel Bearing Nut Wrench
Wheel Bearing Seal Installation Tool
Special Hub Socket (OVE)
Bar, Breaking (OVE)
Hammer (4 lb)
Long Punch (3/8 pt)

SUPPLIES. Hub/Drum
Bearing Cup(s)
Bearing(s)
Wheel Seal
Cotter Pin
Cap O-Ring
Grease, GAA (Item 1, Appendix E)
Solvent, P-D-680 (Item 6, Appendix E)

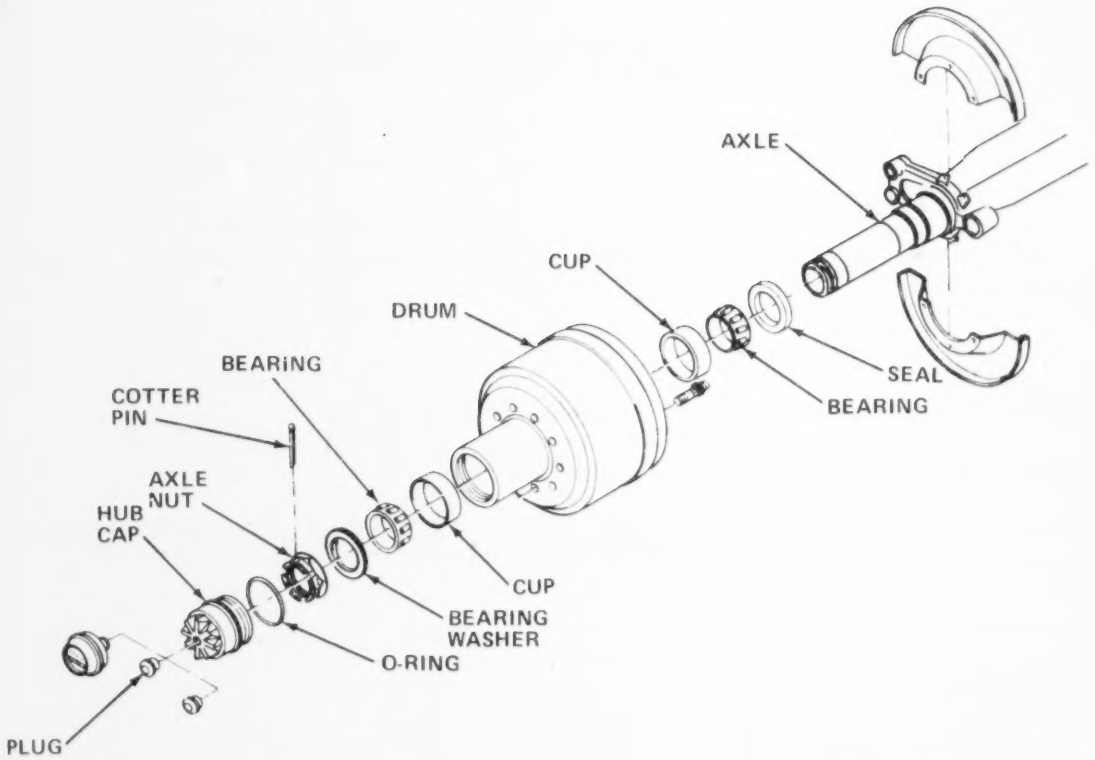
WARNING

TO PREVENT INJURY TO PERSONNEL, BE SURE CHASSIS IS PARKED ON LEVEL GROUND AND IS UNHOOKED FROM TRACTOR BEFORE PROCEEDING.

CAUTION

BE SURE THAT BRAKE SPRING IS CAGED OR DAMAGE TO EQUIPMENT WILL RESULT.

1. Extend chassis leveling jacks to raise wheel high enough to clear ground.
2. If wheel has hubodometer mounted, remove hubodometer (4.4.1.22).
3. Cage spring brake chamber (4.4.1.13).
4. Using special hub socket, remove hub cap and O-ring.
5. Remove cotter pin.
6. Remove axle nut and bearing washer using special hub socket.



NOTE

If new bearings are necessary (steps 7 and 9), bearing cups should be replaced. If old bearing cups are reused, be sure they are free of old grease and foreign matter.

7. Remove outer bearing from hub/drum assembly. Clean and inspect in accordance with TM 9-214, INSPECTION, CARE, AND MAINTENANCE OF ANTIFRICTION BEARINGS. Replace bearing if necessary.

8. Slide hub/drum assembly off axle. Inspect hub/drum for excessive wear or signs of damage. Replace hub/drum if necessary.

9. Remove inner bearing from axle. Clean and inspect in accordance with TM 9-214, INSPECTION, CARE, AND MAINTENANCE OF ANTIFRICTION BEARINGS. Replace bearing if necessary.

10. Using punch and hammer, remove bearing cups from hub/drum assembly if necessary.

11. Remove seal assembly from axle with suitable bearing puller. Discard seal.

NOTE

If a new hub/drum assembly is installed, new bearing cups must be installed into hub/drum assembly.

12. Install bearing cups (if necessary).

13. Install seal onto axle with seal installation tool.

14. Pack bearings with grease as described in TM 9-214, INSPECTION, CARE, AND MAINTENANCE OF ANTIFRICTION BEARINGS.

15. Slide inner bearing onto axle.

16. Slide hub/drum assembly onto axle and carefully seat against seal.

17. Install outer bearing and washer in hub/drum assembly.

18. Screw axle nut on axle and with special hub socket, tighten to 125 ft lbs (170 N•m). Back off axle nut enough to install cotter pin

19. Insert new cotter pin and fasten.

20. Install new O-ring and hub cap.

21. Uncage brake spring (4.4.1.13).

22. Adjust brakes (4.4.1.23).

5.3.2.4 REPLACE CAM BEARING.

TOOLS: Brake Pliers
Ring Pliers

SUPPLIES: Cam Bearing
Cam Bushing
Grease, GAA (Item 1, Appendix E)

1. Position chassis on level ground (preferably concrete) and uncouple from tractor.

WARNING

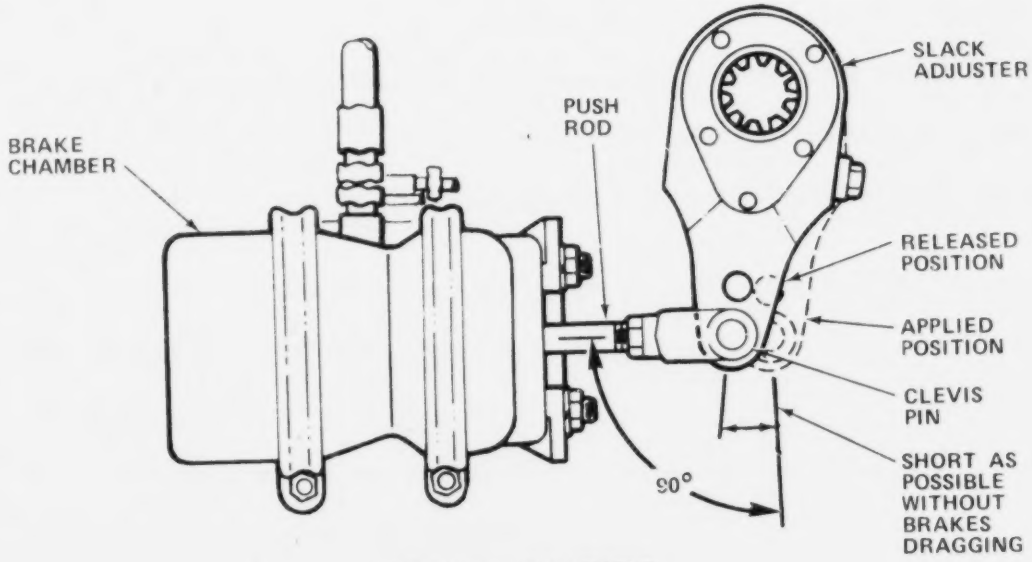
TO PREVENT INJURY TO PERSONNEL, BE SURE CHASSIS IS PARKED ON LEVEL GROUND AND IS UNHOOKED FROM TRAILER BEFORE PROCEEDING.

2. Extend chassis leveling jacks to raise wheel high enough to clear ground.

3. Cage spring brake chamber (4.4.1.13).

WARNING

DO NOT REMOVE PUSHROD CLEVIS PIN UNLESS BRAKE SPRING CHAMBER IS DISABLED BY CAGING TO PREVENT PERSONNEL INJURY.



ANGULAR ADJUSTMENT (BRAKE APPLIED)

4. Remove clevis pin which secures brake chamber pushrod to slack adjuster.

5. Remove hub/drum assembly (5.3.2.3).

7. Remove brake shoe lining (5.3.2.5).

8. Remove retainer ring and washer.

9. Remove slack adjuster, washer. O-ring, cam bushing, and O-ring from camshaft.

NOTE

When removing camshaft be sure the seals and washers are not lost.

10. Remove retainer ring.

11. Remove camshaft by pulling through cam bracket and brake spider housing; retain associated seals and washers.

12. Remove cam bearings.

NOTE

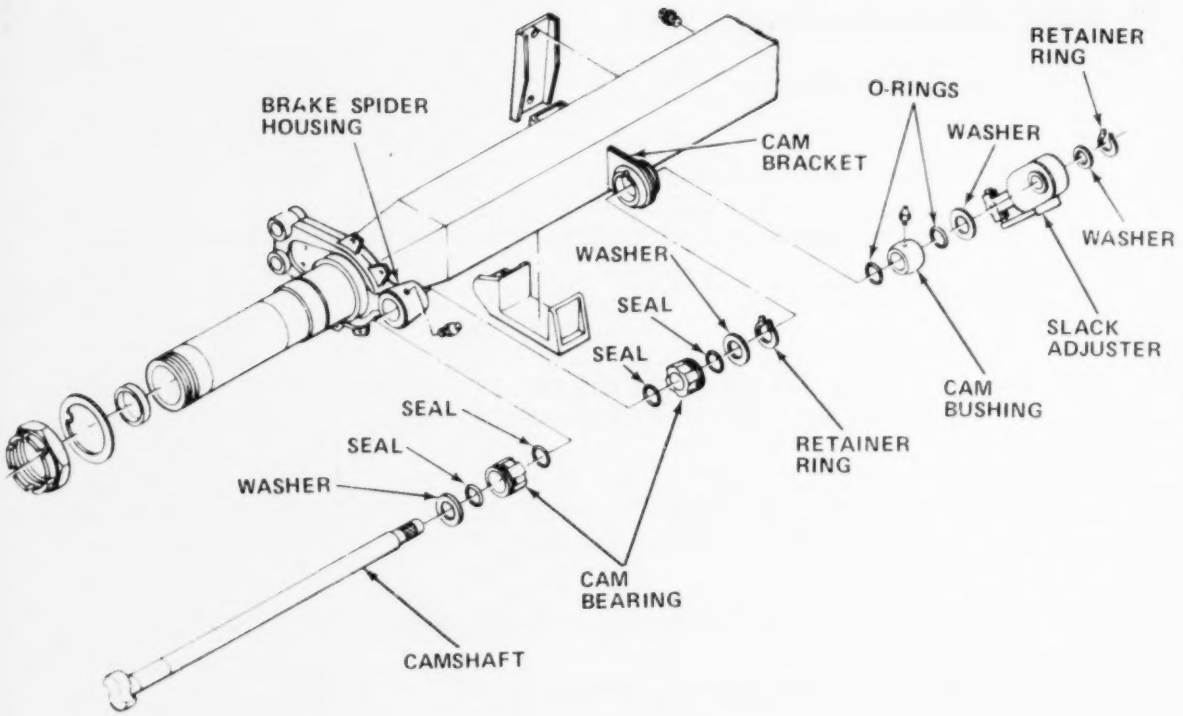
Before installing cam bearings, be sure to thoroughly coat with grease, MIL-G-10924.

13. Install cam bearings.

14. Install camshaft and associated seals and washers. Secure with retainer ring.

15. Install cam bushing and associated O-rings and washer.

16. Install slack adjuster and secure with washer and retainer ring.



WARNING

WHEN APPLYING GREASE TO CAM ROLLER SURFACE, ENSURE THAT NO EXCESS GREASE COMES IN CONTACT WITH BRAKING SURFACES, OR A ROAD ACCIDENT MAY OCCUR.

17. Apply a thin film of grease, MIL-G-10924, to the cam roller surface.
18. Reinstall brake shoe lining (5.3.2.5).
19. Install hub/drum assembly (5.3.2.3).
20. Install clevis pin which secures brake chamber pushrod to slack adjusters.
21. Uncage brake chamber (4.4.1.13).
22. Reinstall wheel and tire assembly (4.4.1.21).
23. Adjust brakes (4.4.1.23).
24. Lower leveling jacks.

5.3.2.5 REPLACE BRAKE SHOE LINING.

TOOLS: Brake Pliers

SUPPLIES: Brake Shoe Lining

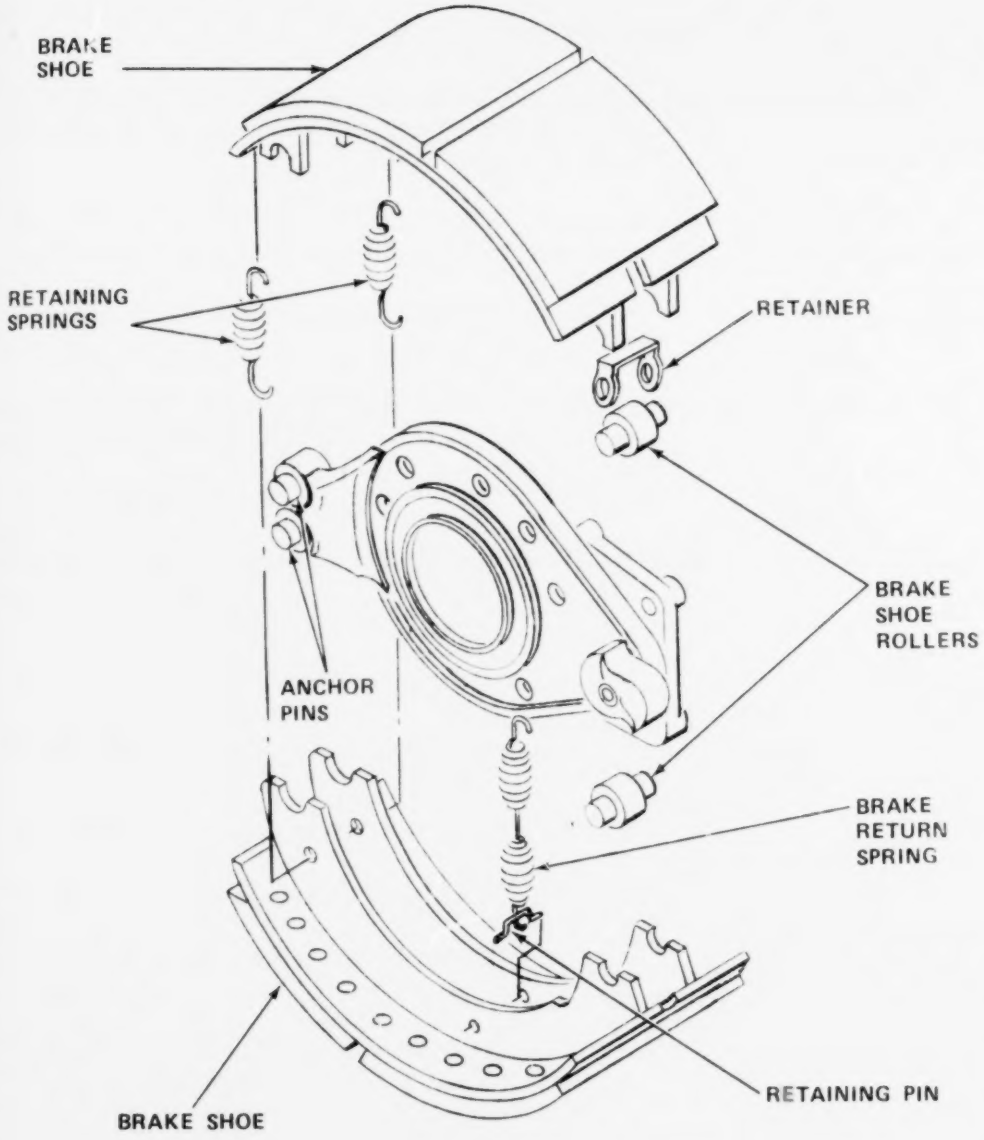
1. Position chassis on level ground (preferably concrete) and uncouple from tractor.

WARNING

BE SURE CHASSIS IS PARKED ON LEVEL GROUND AND IS UNHOOKED FROM TRUCK BEFORE PROCEEDING TO PREVENT PERSONNEL INJURY.

DO NOT USE A DRY BRUSH OR COMPRESSED AIR TO CLEAN BRAKE ASSEMBLY COMPONENTS. THERE MAY BE ASBESTOS DUST ON COMPONENTS WHICH CAN BE HAZARDOUS TO YOUR HEALTH.

2. Extend chassis leveling jacks to raise wheel high enough to clear ground.
3. Cage spring brake chamber (4.4.1.13).
4. Remove hub/drum assembly (5.3.2.3).
5. Remove brake return spring, retaining spring, and spring retaining pin.
6. Remove brake anchor pin and brake shoe.
7. Remove retainer and brake shoe roller from brake shoe.
8. Install brake shoe roller on new brake shoe and secure with retainer.
9. Install brake shoe and secure with brake anchor pin.
10. Install spring retaining pin and brake return spring.
11. Inspect drum for scoring, rough areas. Turn drum if necessary.
12. Install hub/drum assembly (5.3.2.3).
13. Uncage brake spring chamber (4.4.1.13).
14. Adjust brakes (4.4.1.23).
15. Lower leveling jacks.


BRAKE SHOE
RETAINING SPRINGS
RETAINER
BRAKE SHOE ROLLERS
ANCHOR PINS
BRAKE RETURN SPRING
RETAINING PIN
BRAKE SHOE

APPENDIX A

REFERENCES

A-1. SCOPE. This appendix lists all forms, technical manuals and other publications referenced in this manual, as well as other pertinent information.

A-2. PUBLICATION INDEX. The following index should be consulted frequently for the latest changes or revisions and for new publications relating to the material covered in this technical manual.

Consolidated Index of Army Publications and Blank Forms ..... DA PAM 310-1

A-3. FORMS. Refer to DA PAM 738-750, The Army Maintenance Management System (TAMMS), for instructions on the use of maintenance forms pertaining to this material.

Recommended Changes to Publications and Blank Forms ..... DA Form 2028

Recommended Changes to Equipment Technical Publications ..... DA Form 2028-2

Hand Receipt/Annex Number ..... DA Form 2062

Equipment Inspection and Maintenance Worksheet ..... DA Form 2404

Quality Deficiency Report SF-368

A-4. TECHNICAL MANUALS.

Administrative Storage of Equipment ..... TM 740-90-1

Procedures for Destruction of Equipment to Prevent Enemy Use ..... TM 750-244-3

Organizational, Direct Support and General Support Maintenance Repair Parts and Special Tools List (Including Depot Maintenance Repair Parts and Special Tools) for Chassis, Semi-Trailer, Container Transporter ..... TM 5-2330-305-24P

Hand Receipt Covering Contents of Components of End Item (COEI), Basic Issue Items (BII) and Additional Authorization List (AAL) for Chassis, Semi-Trailer, Container Transporter ..... TM 5-2330-305-14-HR

Lubrication Order for Chassis, Semi-Trailer ..... LO 5-2330-305-12

A-5. MISCELLANEOUS PUBLICATIONS. The following Technical Manuals and Field Manuals contain information pertinent to the major items of hardware and/or accessory equipment for the Chassis, Semi-trailer transporter.

a. Maintenance and Repair

Organizational Care, Maintenance and Repair of Pneumatic Tires, Inner Tubes and Radial Tires ..... TM 9-2610-200-20

Metal Body Repair and Related Operations ..... FM 43-2

Welding Theory and Application ..... TM 9-237

Painting Instructions for Field Use ..... TM 43-0139

Inspection, Care and Maintenance of Antifriction Bearings ..... TM 9-214

b. Cold Weather Operation and Maintenance

Basic Cold Weather Manual ..... FM 31-70

Northern Operations ..... FM 31-71

Operation and Maintenance of Ordinance Material in Extreme Cold Weather (0° to -65°F — -18° to -54°C) ..... FM 9-207

c. Nuclear, Biological and Chemical (NBC)

Nuclear, Biological and Chemical (NBC) Protection ..... FM 3-4

Nuclear, Biological and Chemical (NBC) Decontamination ..... FM 3-5

Nuclear, Biological and Chemical (NBC) Operations ..... FM 3-100

d. General

Camouflage ..... FM 5-20

Use and Care of Hand Tools and Measuring Tools ..... TM 9-243

APPENDIX B

MAINTENANCE ALLOCATION CHART

Section I. INTRODUCTION

B-1. GENERAL.

a. This section provides a general explanation of all maintenance and repair functions authorized at various maintenance categories.

b. The Maintenance Allocation Chart (MAC) in Section II designates overall responsibility for the performance of maintenance functions on the identified end item or component. The implementation of maintenance functions upon the end item or component will be consistent with the assigned maintenance functions.

c. Section III lists the special tools and test equipment required for each maintenance function as referenced from Section II.

d. Section IV contains supplemental instructions and explanatory notes for a particular maintenance function.

B-2. MAINTENANCE FUNCTIONS. Maintenance functions will be limited to and defined as follows:

a. INSPECT. To determine the serviceability of an item by comparing its physical, mechanical and/or electrical characteristics with established standards through examination.

b. TEST. To verify serviceability by measuring the mechanical or electrical characteristics of an item and comparing those characteristics with prescribed standards.

c. SERVICE. Operations required periodically to keep an item in proper operating condition, i.e., to clean (includes decontaminate, when required), preserve, drain, paint, or replenish fuel, lubricants, chemical fluids, or gases.

d. ADJUST. To maintain, within prescribed limits, by bringing into proper or exact position or by setting the operating characteristics to specified parameters.

e. ALIGN. To adjust specified variable elements of an item to bring about optimum or desired performance.

f. CALIBRATE. To determine and cause corrections to be made or to be adjusted on instruments or test, measuring and diagnostic equipment used in precision measurement. Consists of comparisons of two instruments, one of which is a certified standard of known accuracy, to detect and adjust any discrepancy in the accuracy of the instrument being compared.

g. INSTALL. The act of emplacing, seating, or fixing into position an item, part or module (component or assembly) in a manner to allow the proper functioning of an equipment or system.

h. REPLACE. The act of substituting a serviceable like-type part, subassembly or module (component or assembly) for an unserviceable counterpart.

i. REPAIR. The application of maintenance services[1], including fault location/troubleshooting[2], removal/installation, and disassembly/assembly[3] procedures, and maintenance actions[4] to identify troubles and restore serviceability to an item by correcting specific damage, fault, malfunction, or failure in a part, subassembly, module (component or assembly), end item or system.

j. OVERHAUL. That maintenance effort (service/action) necessary to restore an item to a completely serviceable/operational condition as prescribed by maintenance standards in appropriate technical publication (i.e., DMWR). Overhaul is normally the highest degree of maintenance performed by the Army. Overhaul does not normally return an item to like-new condition.

k. REBUILD. Consists of those services/actions necessary for the restoration of unserviceable equipment to a like-new condition in accordance with original manufacturing standards. Rebuild is the highest degree of material maintenance applied to Army equipment. The rebuild operation includes the act of returning to zero those age measurements (hours/miles, etc) considered in classifying Army equipment/components.

B-3. EXPLANATION OF COLUMNS IN THE MAC, SECTION II.

a. COLUMN (1): GROUP NUMBER Column (1) lists functional group code numbers, the purpose of which is to identify maintenance significant components, assemblies, subassemblies and modules with the next higher assembly. End item group number shall be "00."

b. COLUMN (2): COMPONENT/ASSEMBLY. Column (2) contains the names of components, assemblies, subassemblies, and modules for which maintenance is authorized.

c. COLUMN (3): MAINTENANCE FUNCTION. Column (3) lists the functions to be performed on the item listed in Column (2). (For detailed explanation of these functions, see paragraph B-2.)

[1]Services - Inspect, test, service, adjust, align, calibrate and/or replace.

[2]Fault locate/troubleshoot - The process of investigating and detecting the cause of equipment malfunctioning; the act of isolating a fault within a system or unit under test (UUT).

[3]Disassemble/assemble - Encompasses the step-by-step taking apart (or breakdown) of a spare/functional group coded item to the level of its least componency identified as maintenance significant (i.e., assigned an SMR code) for the category of maintenance under consideration.

[4]Actions - Welding, grinding, riveting, straightening, facing, remachining and/or resurfacing

d. COLUMN (4): MAINTENANCE CATEGORY. Column (4) specifies, by the listing of a work time figure in the appropriate subcolumn(s), the category of maintenance authorized to perform the function listed in Column (3). This figure represents the active time required to perform that maintenance function at the indicated category of maintenance. If the number or complexity of the tasks within the listed maintenance function varies at different maintenance categories, appropriate work time figures will be shown for each category. The work time figure represents the average time required to restore an item (assembly, subassembly, component, module, end item or system) to a serviceable condition under typical field operation conditions. This time includes preparation time (including any necessary disassembly/assembly time), troubleshooting/fault location time, and quality assurance/quality control time in addition to the time required to perform the specific tasks identified for the maintenance functions authorized in the Maintenance Allocation Chart. The symbol designations for the various maintenance categories are as follows:

C Operator or Crew

O Organizational Maintenance

F Direct Support Maintenance

H General Support Maintenance

D Depot Maintenance

e. COLUMN (5): TOOLS AND EQUIPMENT. Column (5) specifies by code those common tool sets (not individual tools) and special tools, TMDE and support equipment required to perform the designated function.

f. COLUMN (6): REMARKS. This column shall, when applicable, contain a letter code, in alphabetical order, which shall be keyed to the remarks contained in Section IV.

B-4. EXPLANATION OF COLUMNS IN TOOL AND TEST EQUIPMENT REQUIREMENTS, SECTION III

a. COLUMN (1): REFERENCE CODE. The tool and test equipment reference code correlates with a code used in the MAC, Section II, Column (5).

b. COLUMN (2): MAINTENANCE CATEGORY. The lowest category of maintenance authorized to use the tool or test equipment.

c. COLUMN (3): NOMENCLATURE. Name or identification of the tool or test equipment.

d. COLUMN (4): NATIONAL STOCK NUMBER. The National stock number of the tool or test equipment.

e. COLUMN (5): TOOL NUMBER. The manufacturer's part number.

B-5. EXPLANATION OF REFERENCE CODES, SECTION IV.

a. COLUMN (1): REFERENCE CODE. The code recorded in Column (6), Section II.

a. COLUMN (2): REMARKS. This column lists information pertinent to the mainitenance function being performed as indicated in the MAC, Section II.

Section II. MAINTENANCE ALLOCATION CHART FOR CHASSIS, SEMI-TRAILER

(1) Group Number	(2) Component/Assembly	(3) Maintenance Function	(4) Maintenance Level C	O	F	H	D	(5) Tools and Equipment	(6) Remarks
00	CHASSIS	Inspect	0.1						
		Remove/ Install		1.0					
		Repair		1.3	1.0			1	
01	CHASSIS, SEMITRAILER	Inspect	1.0						
		Remove/ Install		6.5					
		Repair		1.0	3.0			1	
02	LEVELING JACK/ LANDING GEAR ASSEMBLY	Inspect	0.3						
		Replace		0.8				1	
		Repair			3.5			1	
03	I IGHTS/WIRING ASSEMBLY	Inspect	0.3						
		Replace		3.7				1	
		Repair			2.0			1	
	LICENSE PLATE LIGHT	Replace		1.0				1	
		Repair		0.5				1	
	CLEARANCE/ MARKER/BLACKOUT LIGHTS	Replace		1.0				1	
		Repair		0.5				1	
	STOP/TURN/ TAIL LIGHTS	Replace		1.0				1	
		Repair		0.5				1	
04	PNEUMATIC ASSEMBLY	Inspect	1.0						
		Repair		2.5	2.5			1,5,10	
	AIR TANK ASSEMBLIES	Inspect	0.3	0.3					
		Replace			2.5			1,10	
		Repair		1.5				1,10	
	OVERRIDE ASSEMBLY	Inspect	0.2						
		Repair		1.5				1	

Section II. MAINTENANCE ALLOCATION CHART FOR CHASSIS, SEMI-TRAILER (Cont)

(1) Group Number	(2) Component/Assembly	(3) Maintenance Function	(4) Maintenance Level C	O	F	H	D	(5) Tools and Equipment	(6) Remarks
04	HITCH ASSEMBLY		0.2						
		Repair		2.0				1	
05	WHEEL/DRUM ASSEMBLY	Replace			1.8				
		Repair		1.5	2.0			3,7,11, 13,20,21, 24	
	BEARINGS/SEALS	Adjust			1.0			9,19	
		Replace			2.0			2,8	
06	AXLE ASSEMBLY	Inspect		1.0					
		Repair			2.5			1	
	BRAKES	Inspect		1.0					
		Adjust		1.0				1	
		Replace			2.5			1,4,19	
07	AIR RIDE ASSEMBLY	Inspect		0.5					
		Adjust		0.5				1	
		Repair		4.0				1	
	HOSE ASSEMBLY	Inspect	0.3	0.5					
		Repair		1.5				1	
	SUSPENSION ASSEMBLY	Inspect	0.3	1.0				1,6,12, 13,14, 15,16, 17,18, 20	
		Repair		2.8					

Section III. TOOL AND TEST EQUIPMENT REQUIREMENTS

(1) TOOL OR TEST EQUIPMENT REFERENCE CODE	(2) MAINTENANCE CATEGORY	(3) NOMENCLATURE	(4) NATIONAL/NATO STOCK NUMBER	(5) TOOL NUMBER
1	O,F,G	Tool Kit, General Mechanic's, Automotive	5180-00-177-7033	50980
2	O,F	Puller, Bearing	5180-01-130-5508	CJ105A (55719)
3	C	Gage, Press., Tire Truck	4910-01-173-6325	GA246
4	O	Wrench, Torque		TER352A (55719)
5	O	Wrench, Comb, 1-5/16 in.	5120-00-228-9518	OEX42
6	O	Wrench, Comb, 1-1/2 in.	5120-00-277-8834	OEX48
7	O,F	Special Hub Socket		ACC005 963900 (14109)
8	F	Installation Tool, Oil Seal		ACC006 006900 (14109)
9	F	Pliers, Retaining Ring	5120-01-190-0780	PR129A (55719)
10	F	Wrench Set	5120-00-658-9805	SCB61575
11	O	Extension, Socket Wrench, 15"		SX15
12	O,F	Wrench, Torque	5120-00-640-6364	TER175 (55719)
13	O	Wrench, Torque		TER602
14	O	Wrench, Torque	5120-00-221-7984	TER1003 (55719)

Section III. TOOL AND TEST EQUIPMENT REQUIREMENTS (Cont)

(1) TOOL OR TEST EQUIPMENT REFERENCE CODE	(2) MAINTENANCE CATEGORY	(3) NOMENCLATURE	(4) NATIONAL/NATO STOCK NUMBER	(5) TOOL NUMBER
15	O	Wrench, Torque	5120-00-221-7983	TE602
16	O	Socket, 1-1/18 in.		TW361
17	O	Socket, 1-5/16 in.	5120-00-228-9518	TW421
18	O	Socket 1-72 in.	5120-00-293-0094	TW481 (55719)
19	F	Pliers, Brake	5120-00-690-8044	131A (55719)
20	O	Hammer, 4 lb		90013 (93389)
21	F	Bar, Extension		SX15 (55719)
22	O,F	Pliers, Slip Joint, 10 in.	5120-00-278-0352	420 (71612)
23	F	Pliers, Retaining Ring	5120-01-190-0780	PR129A (55719)
24	O	Bar, Breaker	5120-01-016-8709	SN24B (55719)

APPENDIX C

COMPONENTS OF END ITEM AND BASIC ISSUE ITEMS LISTS

Section I. INTRODUCTION

C-1. SCOPE. This appendix lists components of end item and basic issue items for the Chassis Section to help you inventory items required for safe and efficient operation.

C-2. GENERAL. The Components of End Item and Basic Issue items Lists are divided into the following sections:

a. SECTION II: COMPONENTS OF END ITEM. This listing is for informational purposes only and is not authority to requisition replacements. These items are part of the end item but are removed and separately packaged for transportation or shipment. As part of the end item, these items must be with the end item whenever it is issued or transferred between property accounts. Illustrations are furnished to assist you in identifying the items.

b. SECTION III. BASIC ISSUE ITEMS (BII). These are the minimum essential items required to place the Chassis Section in operation, to operate it and to perform emergency repairs. Although shipped separately packaged, BII must be with the Chassis Section during operation and whenever it is transferred between property accounts. The illustrations will assist you with hard-to-identify items. This manual is your authority to request/requisition replacement BII based on TOE/MTOE authorization of the end item.

C-3. EXPLANATION OF COLUMNS. The following provides an explanation of columns found in the tabular listings:

a. COLUMN (1): ILLUSTRATION NUMBER (ILLUS NUMBER). This column indicates the number of the illustration in which the item is shown.

b. COLUMN (2): NATIONAL STOCK NUMBER. Indicates the National stock number assigned to the item and will be used for requisitioning purposes.

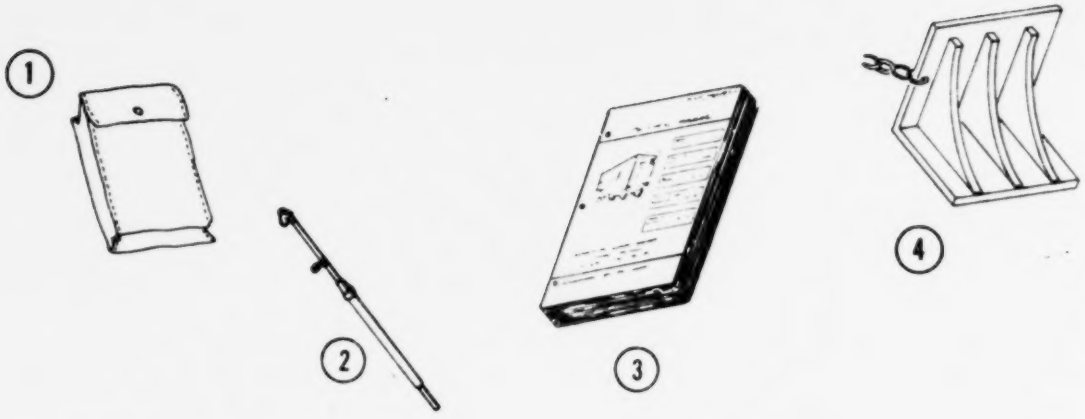
c. COLUMN (3): DESCRIPTION. Indicates the National item name and, if required, a minimum, description to identify and locate the item. The last line for each item indicates the FSCM (in parentheses) followed by part number.

d. COLUMN (4): UNIT OF MEASURE (U/M). Indicates the measure used in performing the actual operational/maintenance function. This measure is expressed by a two-character alphabetical abbreviation (e.g., ea, in, pr).

e. COLUMN (5): QUANTITY REQUIRED (QTY RQR). Indicates the quantity of the item authorized to be used with/on the equipment.

Section II. COMPONENTS OF END ITEM
(Not Applicable)

Section III. BASIC ISSUE ITEMS



(1) ILLUS NUMBER	(2) NATIONAL STOCK NUMBER	(3) DESCRIPTION FSCM AND PART NUMBER	(4) U/M	(5) QTY RQR
1	7520-00-559-9618	CASE, MAINTENANCE AND OPERATIONAL MANUAL (87349) MIL-C-11743	EA	1
2	4910-00-204-3170	GAGE, PRESSURE, TIRE (81348) GG-G-91	EA	1
3	TM 5-2330-305-14	MANUALS, TECHNICALS OPERATOR'S, ORGANIZATIONAL, DIRECT AND GENERAL SUPPORT MAINTENANCE, TSS, CHASSIS, SEMITRAILER	EA	1
	LO 5-2330-305-14	LUBRICATION ORDER, TSS, SEMITRAILER	EA	1
4	2530-01-216-2575	CHOCK, WHEEL TRACK (97403) 13225E4710	SE	1

APPENDIX D

ADDITIONAL AUTHORIZATION LIST
(Not Applicable)

APPENDIX E

EXPENDABLE/DURABLE SUPPLIES AND MATERIALS LIST

Section I. INTRODUCTION

E-1. SCOPE. This appendix lists expendable/durable supplies and materials you will need to operate and maintain the Chassis Section. This listing is for information purposes only and is not authority to requisition the listed items. These items are authorized to you by CTA 50-970, Expendable/Durable Items (except Medical, Class V, Repair Parts and Heraldic Items).

E-2. EXPLANATION OF COLUMNS.

a. COLUMN (1): ITEM NUMBER. This number is assigned to the entry in the listing and is referenced in the narrative instruction to identify the material (e.g., "Use cleaning compound, Item 5, Appendix D.").

b. COLUMN (2): LEVEL. This column identifies the lowest level of maintenance that requires the listed item.

C Operator/Crew

O Organizational Maintenance

F Direct Support Maintenance

H General Support Maintenance

c. COLUMN (3): NATIONAL STOCK NUMBER. This is the National stock number assigned to the item. Use it to request or requisition the item.

d. COLUMN (4): DESCRIPTION. Indicates the National item name and, if required, a description to identify the item. The last line for each item indicates the part number followed by Federal Supply Code for Manufacturer (FSCM) in parentheses followed by the part number.

e. COLUMN (5): UNIT OF MEASURE (U/M). Indicates the measure used in performing the actual maintenance function. This measure is expressed by two-character alphabetical abbreviations (e.g., ea, in, pr). If the unit of measure differs from the unit of issue, requisition the lowest unit of issue that will satisfy your requirements.

Section II. EXPENDABLE/DURABLE SUPPLIES AND MATERIALS LIST

(1) ITEM NUMBER	(2) LEVEL	(3) NATIONAL STOCK NUMBER	(4) DESCRIPTION	(5) U/M
1	O	9150-00-190-0904	Grease GAA (MIL-G-10924)	pl
2	O	9150-00-985-7316	Grease GGP (MIL-G-23549)	pl
3	O,F	8030-00-656-1426	Sealant, Thread	tu
4	O,F	6850-00-274-5421	Solvent, P-D-680	gl

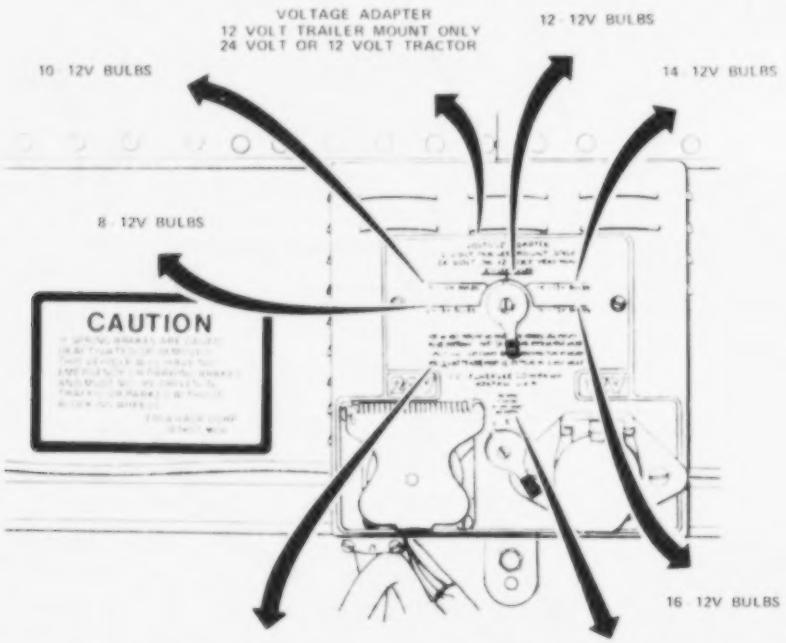
APPENDIX F

STOWAGE GUIDE

F-1. SCOPE. This appendix shows the locations for stowage of equipment and material.

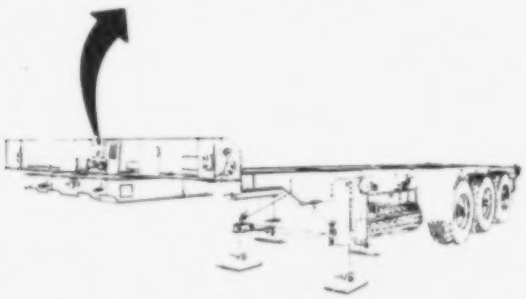
F-2. GENERAL. The picture below shows the location of signs used in the section. Some are cautions or information you need to operate the section safely.

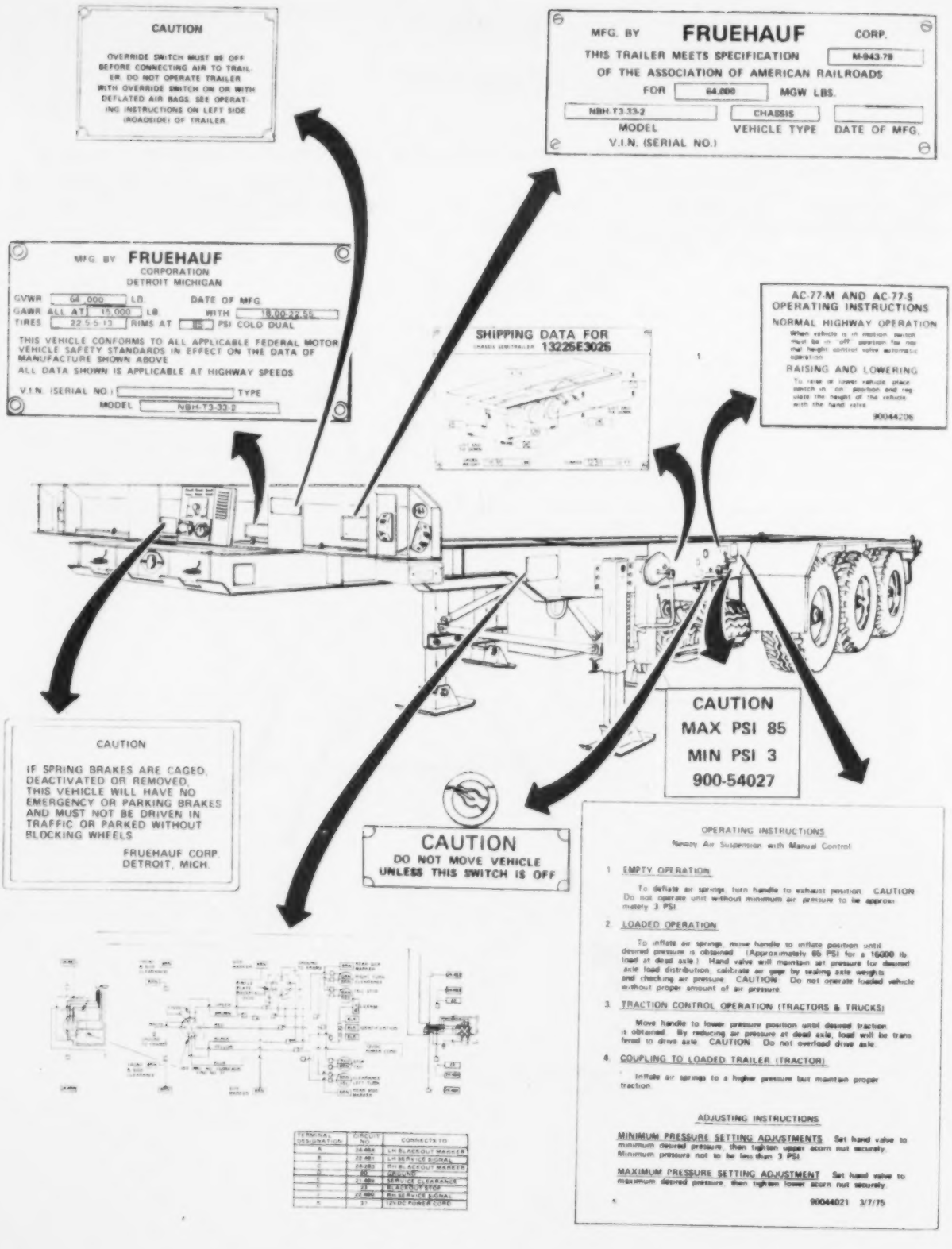
STOWAGE GUIDE

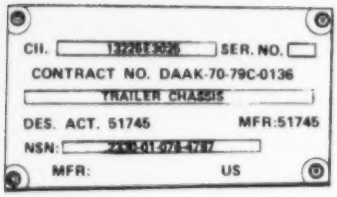


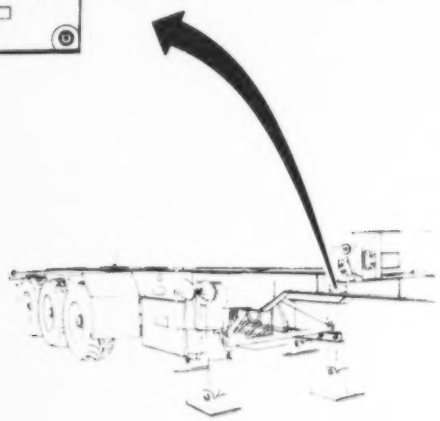
FOR 24 VOLT TRACTOR SET POINTER TO NEAREST LOW NUMBER OF BULBS ON TRAILER. INSERT 24 VOLT PLUG INTO 24 VOLT SOCKET. CAUTION: SET POINTER BEFORE INSERTING PLUG IN SOCKET. FOR 12 VOLT TRACTOR INSERT 12 VOLT PLUG IN 12 VOLT SOCKET.

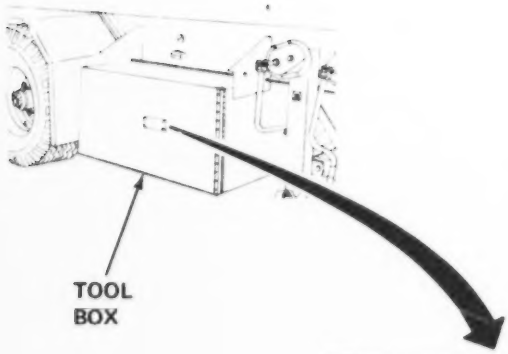
SET LEVER TO NUMBER OF STOP LAMPS ON TRAILER




CAUTION
OVERRIDE SWITCH MUST BE OFF BEFORE CONNECTING AIR TO TRAILER. DO NOT OPERATE TRAILER WITH OVERRIDE SWITCH ON OR WITH DEFLATED AIR BAGS. SEE OPERATING INSTRUCTIONS ON LEFT SIDE (ROADSIDE) OF TRAILER.
MFG. BY FRUEHAUF CORP.
THIS TRAILER MEETS SPECIFICATION M-943-79
OF THE ASSOCIATION OF AMERICAN RAILROADS
FOR 64,000 MGW LBS.
NBH-T3-33-2 MODEL
CHASSIS VEHICLE TYPE
DATE OF MFG.
V.I.N. (SERIAL NO.)
MFG. BY FRUEHAUF CORPORATION
DETROIT MICHIGAN
GVWR 64,000 LB. DATE OF MFG.
GAWR ALL AT 15,000 LB WITH 18.00-22.5S
TIRES 22.5-5-13 RIMS AT 85 PSI COLD DUAL
THIS VEHICLE CONFORMS TO ALL APPLICABLE FEDERAL MOTOR VEHICLE SAFETY STANDARDS IN EFFECT ON THE DATA OF MANUFACTURE SHOWN ABOVE.
ALL DATA SHOWN IS APPLICABLE AT HIGHWAY SPEEDS
V.I.N. (SERIAL NO.) TYPE
MODEL NBH-T3-33-2
SHIPPING DATA FOR
CHASSIS SEMITRAILER 13225E3025
AC-77-M AND AC-77-S OPERATING INSTRUCTIONS
NORMAL HIGHWAY OPERATION
When vehicle is in motion, switch must be in "off" position for normal height control valve automatic operation.
RAISING AND LOWERING
To raise or lower vehicle, place switch in "on" position and regulate the height of the vehicle with the hand valve.
90044206
CAUTION
IF SPRING BRAKES ARE CAGED, DEACTIVATED OR REMOVED, THIS VEHICLE WILL HAVE NO EMERGENCY OR PARKING BRAKES AND MUST NOT BE DRIVEN IN TRAFFIC OR PARKED WITHOUT BLOCKING WHEELS.
FRUEHAUF CORP.
DETROIT, MICH.
CAUTION
MAX PSI 85
MIN PSI 3
900-54027
CAUTION
DO NOT MOVE VEHICLE
UNLESS THIS SWITCH IS OFF
OPERATING INSTRUCTIONS
Rideaire Air Suspension with Manual Control
1. EMPTY OPERATION
To deflate air springs, turn handle to exhaust position. CAUTION Do not operate unit without minimum air pressure to be approximately 3 PSI.
2. LOADED OPERATION
To inflate air springs, move handle to inflate position until desired pressure is obtained. (Approximately 85 PSI for a 16000 lb. load at dead axle.) Hand valve will maintain set pressure for desired axle load distribution, calibrate air gage by scaling axle weights and checking air pressure. CAUTION Do not operate loaded vehicle without proper amount of air pressure.
3. TRACTION CONTROL OPERATION (TRACTORS & TRUCKS)
Move handle to lower pressure position until desired traction is obtained. By reducing air pressure at dead axle, load will be transfered to drive axle. CAUTION Do not overload drive axle.
4. COUPLING TO LOADED TRAILER (TRACTOR)
Inflate air springs to a higher pressure but maintain proper traction.
ADJUSTING INSTRUCTIONS
MINIMUM PRESSURE SETTING ADJUSTMENTS Set hand valve to minimum desired pressure, then tighten upper acorn nut securely. Minimum pressure not to be less than 3 PSI.
MAXIMUM PRESSURE SETTING ADJUSTMENT Set hand valve to maximum desired pressure, then tighten lower acorn nut securely.
90044021 3/7/75
TERMINAL DESIGNATION
CIRCUIT NO.
CONNECTS TO
A 24-484 LH B.A./CUT MARKER
B 72-481 LH SERVICE SIGNAL
C 24-283 RH B.A./CUT MARKER
D 62 GROUND
E 21-486 SERVICE CLEARANCE
F 23 B.A./CUT STOP
G 72-486 RH SERVICE SIGNAL
K 31 12 VDC POWER CORD







JACKING INSTRUCTIONS FOR CHANGING TIRES

1. LOCATE TIRE TO BE CHANGED OVER LEVEL OR LOW SURFACE AREA.
2. USE LEVELING JACK TO CLEAR TIRE ABOVE SURFACE.

INDEX

SUBJECT — PARAGRAPH

CHASSIS, SEMI-TRAILER

A

Adjust Brakes 4.4.1.23
Air Hose, Replace 4.4.1.25
Air Spring, Operation 1.3.5.8
Air Spring, Replace 4.4.1.20
Air Storage Tanks, Operation 1.3.5.1
Air Storage Tanks, Moisture Ejector Lanyards 2.1.4
Air Storage Tanks, Replace 5.3.2.2
Assembly and Preparation for Use 2.3.1
Auxiliary Service Relay Valve, Operation 1.3.5.5
Auxiliary Service Relay Valve, Replace 4.4.1.12

B

Back Slap Chamber, Replace 4.4.1.18
Blackout Marker Light Assembly, Replace 4.4.1.7
Blackout Stoplight Assembly, Repair 4.4.1.6
Brake Chamber, Operation 1.3.5.4
Brake Chamber, Replace 4.4.1.13
Brake Adjustment, Initial 4.4.1.23
Brake Shoe Lining, Replace 5.3.2.5
Brake System 1.3.3
Brake System, Operation 1.3.6

C

Cam Bearing, Replace 5.3.2.4
Clearance Lights, Repair 4.4.1.5
Common Tools and Equipment 4.1.1
Components, Location and Description of Major 1.2.2

D

Data, Equipment 1.2.3
Decals, Operating Instructions and 2.3.3

E

Electrical System 1.3.4
Equipment Data 1.2.3
Equipment Purpose, Capabilities, and Features 1.2.1

INDEX

SUBJECT	PARAGRAPH
CHASSIS, SEMI-TRAILER (Cont)	
F	
Features, Equipment Purpose, Capabilities and	1.2.1
Fording	2.4.4
G	
Gage, Replace	4.4.1.17
H	
Hand Lever Valve, Replace	4.4.1.16
Height Control Valve	1.3.5.6
Height Control Valve, Replace	4.4.1.24
Hub/Drum Assembly, Repair	5.3.2.3
Hubodometer	2.1.5
Hubodometer, Replace	4.4.1.22
I	
Identification Lights, Repair	4.4.1.5
Improvements, Reporting Equipment	1.1.3
Information, Warranty	1.1.5
Instructions, Lubrication	3.1.1
L	
Landing Gear Assembly, Replace	4.4.1.2
Land Gear and Leveling Jack Assemblies, Repair	5.3.2.1
Leveling Jack, Replace	4.4.1.1
License Plate Light, Repair	4.4.1.4
Location and Description of Major Components	1.2.2
Lubrication Instructions	3.1.1
M	
Main Frame Assembly	1.3.1
Maintenance Forms and Records	1.1.2
Maintenance Procedures:	
Direct/General Support	5.3.1
Operator's	3.3.1
Organizational	4.4.1

INDEX

SUBJECT	PARAGRAPH
CHASSIS, SEMI-TRAILER (Cont)	
Marker Lights, Repair	4.4.1.5
Moisture Ejector, Replace	4.4.1.29
O	
Operating Instructions and Decals	2.3.3
Operation, Brake System	1.3.6
Operation in Cold Weather	2.4.1
Operation in Dusty and Sandy Areas	2.4.3
Operation in Extreme Heat	2.4.2
Operation, Override Assembly Pilot Valve	1.3.7
Override Assembly, Controls and Indicators	2.1.2
Override Assembly, Operation	1.3.5.7
Override Assembly Pilot Valve Operation	1.3.7
Override Valve Selector, Replace	4.4.1.14
P	
Parking	2.3.2
Pilot Valve, Replace	4.4.1.15
Pneumatic System	1.3.5
Preparation for Storage or Shipment	4.5.1
Preventive Maintenance Checks and Services:	
Operator's	2.2.1
Organizational	4.2.1
Procedures, Maintenance:	
Direct/General Support	5.3.1
Operator's	3.3.1
Organizational	4.3.1
Q, R	
Quick Release Valve, Replace	4.4.1.11
Ratio Relay Valve, Operation	1.3.5.3
Ratio Relay Valve, Replace	4.4.1.10
Records, Maintenance Forms and	1.1.2
Reflector, Replace	4.4.1.9
Relay Quick Release Valves, Operation	1.3.5.2
Repair Blackout Stoplight Assembly	4.4.1.6
Repair License Plate Light	4.4.1.4
Repair Landing Gear and Leveling Jack Assemblies	5.3.2.1
Repair Parts	4.1.3

INDEX

SUBJECT	PARAGRAPH
CHASSIS, SEMI-TRAILER (Cont)	
Repair Parts; Special Tools; Test, Measurement, and Diagnostic Equipment; and Support Equipment	5.1.1
Replace:	
Air Hose	4.4.1.25
Air Spring	4.4.1.20
Air Tank	5.3.2.2
Auxiliary Service Relay Valve	4.4.1.12
Back Slap Chamber	4.4.1.18
Blackout Marker Light Assembly	4.4.1.7
Brake Chamber	4.4.1.13
Brake Shoe Lining	5.3.2.5
Cam Bearing	5.3.2.4
Equalizer and Bushing	4.4.1.27
Gage	4.4.1.17
Hand Lever Valve	4.4.1.16
Height Control Valve	4.4.1.24
Hubodometer	4.4.1.22
Landing Gear Assembly	4.4.1.2
Leveling Jack	4.4.1.1
Moisture Ejector	4.4.1.29
Override Valve Selector	4.4.1.14
Pilot Valve	4.4.1.15
Quick Release Valve	4.4.1.11
Ratio Relay Valve	4.4.1.10
Reflector	4.4.1.9
Shock Absorber	4.4.1.26
Shutoff Valves	4.4.1.19
Stoplights, Turn Signals and Tail Lights	4.4.1.8
Tires	4.4.1.21
U-bolts	4.4.1.28
Voltage Control Unit	4.4.1.3
Reporting Equipment Improvements (EIR's)	1.1.3

S

Scope	1.1.1
Services, Preventive Maintenance Checks and:	
Operator's	2.2.1
Organizational	4.2.1

INDEX

SUBJECT	PARAGRAPH
CHASSIS, SEMI-TRAILER (Cont)	
Shipment, Preparation for Storage or	4.5.1
Shock Absorber, Replace	4.4.1.26
Shutoff Valves	4.4.1.19
Special Tools; Test, Measurement, and Diagnostic Equipment; and Support Equipment	4.1.2
Stoplights, Replace	4.4.1.8
Support, Leveling and Locking	2.1.3
Suspension System	1.3.2
T	
Tail Lights, Replace	4.4.1.8
Tires, Replace	4.4.1.21
Equalizer and Bushing, Replace	4.4.1.27
Troubleshooting:	
Direct/General Support	5.2.1
Operator's	3.2.1
Organizational	4.3.1
Turn Signals, Replace	4.4.1.8
U	
U-Bolts, Replace	4.4.1.28
V	
Voltage Control Unit, Controls and Indicators	2.1.1
Voltage Control Unit, Replace	4.4.1.3
W	
Warranty Information	1.1.5

By Order of the Secretary of the Army:

JOHN A. WICKHAM, JR.
General, United States Army
Chief of Staff

Official:

R. L. DILWORTH
Brigadier General, United States Army
The Adjutant General

DISTRIBUTION:
To be distributed in accordance with DA Form 12-39R, Operator, Organizational, Direct Support and General Support Maintenance Requirements for Trailer, Topographic Support System ADCOR.

☆ U. S. GOVERNMENT PRINTING OFFICE : 1989 O - 242-451 (05023)

RECOMMENDED CHANGES TO EQUIPMENT TECHNICAL PUBLICATIONS

SOMETHING WRONG WITH THIS PUBLICATION?

FROM (PRINT YOUR UNIT'S COMPLETE ADDRESS)
PFC JOHN DOE
COA, 3d ENGINEER BN
FT. LEONARDWOOD, MO 63108

DATE SENT

PUBLICATION NUMBER	PUBLICATION DATE	PUBLICATION TITLE
TM 5-2330-305-14	20 FEB 87	CHASSIS, SEMI-TRAILER TOPOGRAPHIC SUPPORT SYSTEM

BE EXACT. PIN-POINT WHERE IT IS

PAGE NO	PARAGRAPH	FIGURE NO	TABLE NO	IN THIS SPACE TELL WHAT IS WRONG AND WHAT SHOULD BE DONE ABOUT IT:
6	2-1 a			In line 6 of paragraph 2-1a the manual states the engine has 6 Cylenders. The engine on my set only has 4 Cylenders. Change the manual to show 4 Cylenders.
B1		4-3		Callout 16 on figure 4-3 is pointing at a bolt. In key to figure 4-3, item 16 is called a shim - Please correct one or the other.
125	line 20			I ordered a gasket, item 19 on figure B-16 by NSN 2910-00-762-3001. I got a gasket but it doesn't fit. Supply says I got what I ordered, so the NSN is wrong. Please give me a good NSN

PRINTED NAME, GRADE OR TITLE, AND TELEPHONE NUMBER	SIGN HERE
JOHN DOE, PFC (268) 317-7111	John Doe JOHN DOE

DA FORM 1 JUL 79 2028-2

PREVIOUS EDITIONS ARE OBSOLETE.

DRSTS-M Overprint 1, 1 Nov 80

P.S.--IF YOUR OUTFIT WANTS TO KNOW ABOUT YOUR RECOMMENDATION MAKE A CARBON COPY OF THIS AND GIVE IT TO YOUR HEADQUARTERS

TEAR ALONG PERFORATED LINE

RECOMMENDED CHANGES TO EQUIPMENT TECHNICAL PUBLICATIONS

SOMETHING WRONG WITH THIS PUBLICATION?

FROM (PRINT YOUR UNIT'S COMPLETE ADDRESS)

DATE SENT

PUBLICATION NUMBER	PUBLICATION DATE	PUBLICATION TITLE
TM 5-2330-305-14	20 FEB 87	TOPOGRAPHIC SUPPORT SYSTEM CHASSIS, SEMI-TRAILER

BE EXACT PIN-POINT WHERE IT IS

PAGE NO	PARA-GRAPH	FIGURE NO	TABLE NO

IN THIS SPACE TELL WHAT IS WRONG AND WHAT SHOULD BE DONE ABOUT IT:

PRINTED NAME, GRADE OR TITLE, AND TELEPHONE NUMBER

SIGN HERE

TEAR ALONG PERFORATED LINE

DA FORM 1 JUL 79 2028-2

PREVIOUS EDITIONS ARE OBSOLETE.

DRSTS-M Overprint 2, 1 Nov 80.

P.S.--IF YOUR OUTFIT WANTS TO KNOW ABOUT YOUR RECOMMENDATION MAKE A CARBON COPY OF THIS AND GIVE IT TO YOUR HEADQUARTERS

TEAR ALONG PERFORATED LINE

RECOMMENDED CHANGES TO EQUIPMENT TECHNICAL PUBLICATIONS

SOMETHING WRONG WITH THIS PUBLICATION?

FROM (PRINT YOUR UNIT'S COMPLETE ADDRESS)

DATE SENT

PUBLICATION NUMBER	PUBLICATION DATE	PUBLICATION TITLE
TM 5-2330-305-14	20 FEB 87	TOPOGRAPHIC SUPPORT SYSTEM CHASSIS, SEMI-TRAILER

BE EXACT PIN-POINT WHERE IT IS

PAGE NO	PARA-GRAPH	FIGURE NO	TABLE NO

IN THIS SPACE TELL WHAT IS WRONG AND WHAT SHOULD BE DONE ABOUT IT:

PRINTED NAME, GRADE OR TITLE, AND TELEPHONE NUMBER

SIGN HERE

DA FORM 1 JUL 79 **2028-2**

PREVIOUS EDITIONS ARE OBSOLETE.

DRSTS-M Overprint 2, 1 Nov 80.

P S --IF YOUR OUTFIT WANTS TO KNOW ABOUT YOUR RECOMMENDATION MAKE A CARBON COPY OF THIS AND GIVE IT TO YOUR HEADQUARTERS

RECOMMENDED CHANGES TO EQUIPMENT TECHNICAL PUBLICATIONS

SOMETHING WRONG WITH THIS PUBLICATION?

FROM (PRINT YOUR UNIT'S COMPLETE ADDRESS)

DATE SENT

PUBLICATION NUMBER	PUBLICATION DATE	PUBLICATION TITLE
TM 5-2330-305-14	20 FEB 87	TOPOGRAPHIC SUPPORT SYSTEM CHASSIS, SEMI-TRAILER

BE EXACT PIN-POINT WHERE IT IS

PAGE NO	PARA-GRAPH	FIGURE NO	TABLE NO

IN THIS SPACE TELL WHAT IS WRONG AND WHAT SHOULD BE DONE ABOUT IT:

PRINTED NAME, GRADE OR TITLE, AND TELEPHONE NUMBER

SIGN HERE

DA FORM 1 JUL 79 2028-2

PREVIOUS EDITIONS ARE OBSOLETE.

DRSTS-M Overprint 2, 1 Nov 80.

P.S.--IF YOUR OUTFIT WANTS TO KNOW ABOUT YOUR RECOMMENDATION MAKE A CARBON COPY OF THIS AND GIVE IT TO YOUR HEADQUARTERS

TEAR ALONG PERFORATED LINE

The Metric System and Equivalents

Linear Measure

1 centimeter = 10 millimeters = .39 inch
1 decimeter = 10 centimeters = 3.94 inches
1 meter = 10 decimeters = 39.37 inches
1 dekameter = 10 meters = 32.8 feet
1 hectometer = 10 dekameters = 328.08 feet
1 kilometer = 10 hectometers = 3,280.8 feet

Weights

1 centigram = 10 milligrams = .15 grain
1 decigram = 10 centigrams = 1.54 grains
1 gram = 10 decigram = .035 ounce
1 dekagram = 10 grams = .35 ounce
1 hectogram = 10 dekagrams = 3.52 ounces
1 kilogram = 10 hectograms = 2.2 pounds
1 quintal = 100 kilograms = 220.46 pounds
1 metric ton = 10 quintals = 1.1 short tons

Liquid Measure

1 centiliter = 10 milliliters = .34 fl. ounce
1 deciliter = 10 centiliters = 3.38 fl. ounces
1 liter = 10 deciliters = 33.81 fl. ounces
1 dekaliter = 10 liters = 2.64 gallons
1 hectoliter = 10 dekaliters = 26.42 gallons
1 kiloliter = 10 hectoliters = 264.18 gallons

Square Measure

1 sq. centimeter = 100 sq. millimeters = .155 sq. inch
1 sq. decimeter = 100 sq. centimeters = 15.5 sq. inches
1 sq. meter (centare) = 100 sq. decimeters = 10.76 sq. feet
1 sq. dekameter (are) = 100 sq. meters = 1,076.4 sq. feet
1 sq. hectometer (hectare) = 100 sq. dekameters = 2.47 acres
1 sq. kilometer = 100 sq. hectometers = .386 sq. mile

Cubic Measure

1 cu. centimeter = 1000 cu. millimeters = .06 cu. inch
1 cu. decimeter = 1000 cu. centimeters = 61.02 cu. inches
1 cu. meter = 1000 cu. decimeters = 35.31 cu. feet

Approximate Conversion Factors

To change	*To*	*Multiply by*	*To change*	*To*	*Multiply by*
inches	centimeters	2.540	ounce-inches	newton-meters	.007062
feet	meters	.305	centimeters	inches	.394
yards	meters	.914	meters	feet	3.280
miles	kilometers	1.609	meters	yards	1.094
square inches	square centimeters	6.451	kilometers	miles	.621
square feet	square meters	.093	square centimeters	square inches	.155
square yards	square meters	.836	square meters	square feet	10.764
square miles	square kilometers	2.590	square meters	square yards	1.196
acres	square hectometers	.405	square kilometers	square miles	.386
cubic feet	cubic meters	.028	square hectometers	acres	2.471
cubic yards	cubic meters	.765	cubic meters	cubic feet	35.315
fluid ounces	milliliters	29,573	cubic meters	cubic yards	1.308
pints	liters	.473	milliliters	fluid ounces	.034
quarts	liters	.946	liters	pints	2.113
gallons	liters	3.785	liters	quarts	1.057
ounces	grams	28.349	liters	gallons	.264
pounds	kilograms	.454	grams	ounces	.035
short tons	metric tons	.907	kilograms	pounds	2.205
pound-feet	newton-meters	1.356	metric tons	short tons	1.102
pound-inches	newton-meters	.11296			

Temperature (Exact)

°F	Fahrenheit temperature	5/9 (after subtracting 32)	Celsius temperature	°C